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FORMA URBIS ROMAE:
THE SEVERAN MARBLE PLAN
AND THE URBAN FORM OF ANCIENT ROME

by

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of the requirements for the degree of
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To my family
and all the other Teachers
who have encouraged me
along the way

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CHAPTER I

INTRODUCTION TO THE MARBLE PLAN

Introduction

The engraved stone fragments known today as the Severan Marble Plan, or *Forma Urbis Marmorea*, are all that remain of a monumental plan of the city of Rome commissioned under the emperor Septimius Severus at the beginning of the third century A.D. (Fig. 1.1). The Marble Plan was colossal, originally measuring over 40 feet high and nearly 60 feet wide (ca.13 by 18.1m). As mounted, it stood taller than a four-story building. This image of the city near its zenith as the imperial capital was engraved into numerous large marble slabs, affixed to and nearly covering the entire surface of an interior wall. The Plan hung in a side room of the splendid portico called the *Templum Pacis*, at the southeast end of the sequence of great Imperial fora in the heart of Rome (Fig. 1.2).

The Marble Plan in its original state depicted nearly every ground floor room in the city, from temple precincts to the bedrooms and closets of the poorest citizens.¹ This vast architectural record, presented at a scale of 1:240, in general appearance bears a strong resemblance to modern archaeological plans of the structures of ancient cities (Fig. 1.3). This Plan was engraved into a smoothed light-gray marble surface, made up of 151

¹ The scope of the Plan excluded some outlying parts of the city (see "Scope of the Plan," below, Chapter 2).

individual slabs regularly arranged.² The engraved lines, symbols, and inscriptions were painted with *minium*, a standard red-orange pigment used by the Romans for highlighting inscriptions.³ Many traces of this paint survive in the recesses of the engraving today. No other colors were used, and the pigment was applied only into the engraving, brightening it but not adding any details.

The Plan records only architecture, omitting all natural features such as watercourses, hills, or trees, except for regular plantings within monumental gardens. The Tiber itself appears on the Plan as nothing but a blank swath, defined only by the architecture and docks built up along its banks. In keeping with this architectural focus, no juridical boundaries are engraved into the Plan. A number of prominent public monuments, as well as some streets, plazas, and minor landmarks, are identified by inscriptions, but no administrative divisions or measurements are indicated. The Plan employs a number of architectural symbols, some of which can be seen in other Roman plans, and others of which are peculiar to the *Forma Urbis*. The meanings of most of these have become fairly clear from their architectural context, but some have remained ambiguous or cryptic, leaving some aspects of the Plan's images open to interpretation. The Plan's very lines carry multiple meanings and can be more confusing to read than they first appear.

The Severan Marble Plan holds undisputed prominence in the study of Rome's architectural topography, and of Roman urban survey in general.⁴ Its traditional use as a bank of architectural data has led to many illuminating conclusions about structures we

2 The marble slabs are identified as Hymettian marble, from Attica in Greece. Some fragments may be Pentelic marble, from the same region (Carettoni et al. [1960], hereafter *PM*, p. 55). The number of slabs comprising the Plan in its original state was determined by L. Cozza, by painstaking studies of the wall on which the Plan was mounted (see his account in *PM*, pp. 177-195). Cozza's conclusions are conveniently summarized by Bloch (1961), pp. 145-6.

3 E. Rodríguez-Almeida, pers. comm. 11/94

4 Bloch (1961), p. 143, for example, offers a glowing appreciation of the Plan, as does Anderson (1982a), p. 72, who calls it "of incalculable scholarly significance." "Topography" has a special meaning here, customary to this field: rather than the usual meaning of ground relief and landforms, topography here signifies the study of the history and location of buildings.

would otherwise know dimly or not at all.⁵ It has also offered unparalleled possibilities for the investigation of Roman urban survey techniques, as there is no extant body of ancient literature describing the practice of this well-developed discipline.⁶ But these uses of the Plan have not exhausted the possibilities contained in this extraordinary source. Its traditional applications in topography and in studies of Roman mapping can be enhanced with additional analysis, but there are also new applications involving the investigation of Rome's urban fabric for which the Plan is uniquely suited, once it can be read with greater confidence.

This study attacks the enigmatic aspects of the Plan. The architectural conventions employed on the Plan have been difficult to interpret in many instances. More generally, the very nature of the Plan has been the subject of much debate, and its purpose has remained uncertain. The Plan testifies to an extraordinary amount of work and care expended in gathering the data that were collected to produce it, and yet the Plan is also characterized by occasional errors of detail, even in the major public monuments. This combination of diligence and carelessness in its execution has been one of the mysteries of the Plan. Further, very few inscriptions provide any identification or information regarding the thousands of rooms so painstakingly recorded. The odd melange of overwhelming detail and peculiar silence in the Severan Marble Plan make it hard to comprehend as a document of recognizable utility. These matters must be clarified so that the data offered by the Plan may be assessed properly. The Plan as a product of Roman surveying must also be understood in relation to Roman theory and practice of survey and map-making.

The present study probes the data available in the Plan for its value in the urban analysis of ancient Rome. The non-monumental architecture on the Plan is to be

⁵ Bloch's review summarizes the Plan's many major contributions to topography up to 1961 (Bloch 1961).

⁶ "Survey" is here used to mean architectural recording, that is, the measurement and mapping of existing buildings (typically for property ownership records). The use of land measurement techniques for the planning and laying out of buildings or cities is a separate issue, because (as this analysis will show, below) this was a separate discipline for the Romans.

comprehensively considered for the first time. It must be determined how useful this unique record can be, without the benefit of archaeological finds to clarify the identification of the many anonymous buildings and rooms depicted on the Plan. Finally, the utility of architectural and structural urban analysis must be demonstrated, for its value in contributing to our understanding of the city of ancient Rome, and of the ancient social values and cultural identity expressed therein. These issues form focal points of the present study.

The first chapter of this dissertation presents an orientation to the Plan itself, and then reviews the reconstructed and recorded portions of its history as an artifact, from the first substantial damage it sustained, through its eventual collapse, burial, and rediscovery in the Renaissance, concluding with a description of its current state. The history of major publications of the Plan is then reviewed, followed by some illustration of the specific topographical applications in which the Plan has proven most useful. This review of the literature also shows that while the Plan has been investigated as evidence of the nature and limitations of the Roman urban survey tradition, its atypical nature has not been elucidated. The context of urban survey to which the Plan belongs must be explored through the few preserved architectural plans in stone, since literature of Roman urban survey has perished. Accordingly, this chapter distinguishes the urban survey tradition from the parallel discipline of Roman field survey, and then undertakes a comprehensive examination of all the surviving ancient Roman architectural plans in order to assess the context within which the Plan should be considered.⁷ This examination shows that the distinction between the *Forma Urbis* and the other plans is striking and significant, and it provides important clues to the Plan's purpose in its original setting. The contrast also clarifies the important similarities among the other stone plans, providing an understanding of the established standards of the Roman urban survey tradition. The historical and

⁷ Field survey was the tradition responsible for the famous grids of centuriation. The discipline unfortunately shares its name with a modern archaeological investigation technique. In this study, "field survey" will refer only to the tradition of the Roman *agrimensores* unless otherwise specified.

architectural milieu of the Plan is then discussed, as well as possible predecessors to the Severan Marble Plan. In sum, this chapter provides necessary background for the subsequent analysis of the Plan's graphic symbols.

The second chapter, a graphic analysis of the Marble Plan, undertakes a close scrutiny of the lines and symbols used on the Plan. A new terminology clarifies the several meanings carried by lines, and particular symbols are examined during the study of two instructive architectural types on the Plan, temples and entertainment buildings. This graphic analysis improves the readability of the Plan and contributes insight into its conception and its nature as an artifact. The second chapter also determines the accuracy of the Plan, so that its reliability for topographic consultation may be properly appreciated. At the conclusion of this graphic analysis, the Plan emerges as a much less puzzling document, with its symbols and images more completely and more confidently decoded, and with its original purpose and context understood securely. The Marble Plan was not an administrative document, as has often been asserted, but was a decorative monument derived from official records and serving to assert civic pride. Understood in this way, the Plan is consonant with the program of other propagandistic urban constructions under the emperor Severus.

The analysis of the Plan will facilitate new applications of its data, beginning with Chapter 3. The Plan's record of non-monumental residential and commercial elements of Rome has received comparatively little scholarly attention, no doubt partly because the dense mass of minor architecture is much harder to read than the images of prominent monuments such as temples and porticoes. Yet it is in connection with this non-monumental component of Rome's urban fabric that the Plan is especially valuable, since the "city beyond the monuments" is very little known through archaeology, because it has perished or lies inaccessible beneath the modern city. The third chapter therefore carries out a typological analysis on the non-monumental buildings depicted on the Plan, identifying their distinguishing features and illustrating the range of variation among the

types. Literary evidence, as well as comparative evidence from Roman cities such as Ostia and Pompeii, contributes to this clarification of the elements of Rome's residential and commercial matrix.

The fourth and final chapter considers some aspects of the urban form of ancient Rome, in light of the special evidence of the Marble Plan together with that of an additional important topographic resource, the Regionary Catalogues. These fourth-century lists of city landmarks, and tallies of various classes of buildings in each region of the city, form a fascinating verbal reflection of the graphic Marble Plan. They offer great insight into the Roman image of the city, and their data, when rendered into comparable density statistics and depicted graphically on maps of Rome, reveal many features of urban fabric, from density of habitation to the frequency of bakeries and baths in various regions of the city. The evidence from the Marble Plan and the Regionary Catalogues combines to allow the assessment of certain aspects of the city's structure that have hitherto been difficult to approach.

Urban structure must be approached beyond the simplistic "planned versus unplanned" dichotomy familiar from traditional urban studies literature. Much of ancient Rome was thoroughly unplanned, as the irregular city blocks shown on the Plan attest, yet especially in this structure there were many formulaic aspects that were direct expressions of Roman culture and history and indicative of the life of a broad spectrum of society rather than of the decisions of a few urban planners. The clarification of this irregular matrix by the typological analysis presented here makes the meaning hidden within the non-monumental structure accessible. The integration or segregation of rich and poor or of commercial, domestic, political and religious architecture, the concentration or dispersal of various components of the urban fabric, these are all quantifiable aspects of the city, throughout sections planned and unplanned, which illustrate values and priorities expressed both intentionally and unintentionally by its citizens. The Marble Plan provides the opportunity to study these aspects of ancient Rome.

The conclusions reached by this new analysis clarify and correct the traditional image of Rome derived substantially from literature and surviving monuments. The residential and small-scale commercial matrix of the city was surprisingly heterogeneous and of consistent composition. Rich lived alongside poor, commerce and residence were thoroughly intermixed, and the social amenities of baths both large and small were completely dispersed throughout the city. The great monuments were inspiring embodiments of magnificence, but the city also presented extremes of poverty, as all but a few of the million-odd citizens lived in astonishingly rudimentary high-rise housing. Such inconvenience was accepted as part of the price for living in the Imperial capital, with its unparalleled luxuries, entertainments, and opportunities for employment and handouts. Rome was a city of extremes, and these extremes also underline the degree to which Romans lived a highly communal life-style, where a crude dwelling might serve as nothing more than a place to sleep, and where socializing, bathing and leisure were all served by buildings outside the home. The structural realities of the city have broad implications for the study of Roman social and cultural history.

Here, as in cities of every age and culture, the structure of the city is an expression of the values and priorities of its builders. This dissertation investigates the structure of ancient Rome through the unique resource that is the Marble Plan. The present study relates the specific aspects of the urban fabric seen in the Plan to Roman culture and social organization as known from literature and archaeology. The urban fabric quantified and studied here may be compared to that from other cities in the Roman world. These comparisons will make clear the features that are unique to the Imperial capital, and those that are held in common amongst various Roman cities. This urban analysis methodology is intended as the beginning of wide-ranging examination that will start in the Roman world and then extend into cross-cultural comparative studies of cities as cultural expression across diverse regions and time periods. Ancient Rome serves as an excellent

initial case study, a richly recorded environment in which to experiment with a methodology to illuminate the connections between culture and urban fabric. The techniques developed here will assist in the interpretation of urban fabric in cities for which there is less documentation. The Severan Marble Plan therefore has much to offer, both as a source of traditional topographical information, and as a springboard to the further study of the architectural manifestations of urban culture.

Fortunes of the Plan

The fortunes of the Marble Plan since its creation between the years A.D. 203 and 211 constitute an interesting story.⁸ The Plan's history as an artifact is necessary background for an understanding of its present state. The damage, eventual collapse, burial, and subsequent rediscovery of the Marble Plan have been thoroughly examined by A. M. Colini.⁹ The following account is essentially an abstract, drawing upon Colini's work and later summaries.¹⁰ For further information regarding the names, dates, and events noted here, Colini's magisterial chapter should be consulted.

Decay

After its construction, the Marble Plan only survived intact for just over 200 years. Around A.D. 420, the wall on which the Plan was mounted suffered its first substantial damage, as a large hole was punched through it more than halfway up near the center. This resulted in the unfortunate loss of areas of particular topographic interest, including much of the Roman Forum, the Imperial palace on the Palatine Hill, the Forum Boarium and Forum Holitorium, and the eastern part of the Capitoline Hill, the sacred center of Rome and site of its greatest temple. It is clear that by A.D. 420 the Plan was no longer

⁸ The question of the Plan's date and its historical context will be considered below in this chapter ("Date of the Plan" and "Predecessors of the Plan").

⁹ Colini's history forms the first chapter of *PM* (pp. 25-31).

¹⁰ Rodríguez-Almeida has summarized this history (Rodríguez-Almeida [1981] (hereafter *FUM*), pp. 21-24), and Anderson has provided a clear, brief English narrative of the convoluted events (Anderson 1982a).

considered of any interest. The hole was later re-closed, with an early Christian mural painted over it. The Templum Pacis complex was gradually abandoned. Procopius, writing in the sixth century, provided a haunting account of the monument in its twilight.¹¹ Filled with the great art of centuries, lavishly appointed with fountains and marble work, this building had once been considered one of the most splendid and beautiful in Rome, even in the world. Now it lay in decay.¹² Some statues were still to be seen, protruding from the rubble, their famous creators' names now confused, or forgotten. Procopius even described cattle making their way through the area.

The Medieval period brought despoilment of the marble slabs. Rodríguez-Almeida has illustrated the way in which all the more accessible lower and side margins of the Plan were lost to scavengers, destined to be burned in the lime kilns for mortar. What remained was an area towards the middle and top of the wall from which all the preserved fragments come (Fig. 1.4).¹³ This remnant of the Plan eventually fell from the wall, and while most of these fragments were scavenged, some were buried in the accumulating debris as centuries of neglect filled the old civic center with dirt and rubbish.

Rediscovery

In May and June of 1562, the remaining fragments came to light once more in a discovery behind the sixth-century Church of SS. Cosma and Damiano, which incorporated the wall of the Plan into its exterior (and which preserves that wall to the present day: see Fig. 1.5).¹⁴ Flaminio Vacca's account, written in 1594, provides a contemporary testimony of this discovery. The Farnese family came into possession of the fragments of the *Forma Urbis*, and in their collections the relics were first studied by antiquarians such as Panvino (the Farnese curator at the time) and Dosio. Perhaps

11 Procopius, *Goth.* 4.21.11-12.

12 Pliny, *NH*, 36.102, and later Herodian (1.14) describe the splendor of the Templum Pacis portico. Josephus, *BJ* 7.5.7 [158-61]; Pliny *NH* 12.94, 34.84, 35.102-3 and 109, 36.27 and 58; Pausanias 6.9.3; and Juvenal 9.23 all remark on the art treasures and grand appointments of the Templum Pacis.

13 Rodríguez-Almeida devotes a chapter to the destruction of the Plan (*FUM* ch. 4, pp. 39-43).

14 On the church, see Riemann (1942), p. 2111.

between 1570 and 1580 drawings were made of ninety-one fragments. While the artists are unknown, it is possible that these were the work of Dosio.¹⁵ The drawings were collected by Orsini, Panvino's successor as the Farnese curator. These drawings survive, gathered in Latin codex 3439 in the Vatican, and referred to as "the Renaissance drawings" (Fig. 1.6).¹⁶ Made with care, they are a valuable and unique record of 59 fragments that have been partially (30) or completely (29) lost since the drawings were made.¹⁷ A close analysis of their fidelity to the original fragments, based on a sample of a "control group" of fragments surviving today, shows that these Renaissance drawings were very painstaking copies, presenting a reasonably high degree of accuracy.¹⁸ After the death of Orsini in 1600, interest seems to have waned in the fragments, and many of the less striking specimens were discarded as rubble and used in a Farnese construction (the *Giardino Segreto*, or Secret Garden) between the via Giulia and the Tiber.

Publication and Studies

The only indication of interest in the Plan from the seventeenth century is a work by Bellori, a publication of the Plan fragments still available at that time entitled *Fragmenta vestigii veteris Romae ex lapidibus Farnesianis* (1673). Despite his collaboration with the architect Bufalini, the illustrations he presents of the fragments are often inaccurate and are generally unreliable in detail; however, for a few minor fragments lost since 1673, they

15 As will be shown below in Chapter 2, it now appears that two hands were responsible for these drawings. Anderson (1982a), pp. 70-1, suggests that the exemplary draftsman Pirro Ligorio should be credited with the illustrations, as his skill as an artist was well known at the time. The traditional attribution has been to Dosio. Perhaps the more painstaking group of illustrations can be provisionally assigned to Ligorio, and the others to Dosio. Available evidence seems insufficient to settle the issue, and in any case the attribution is not vital to the use of the drawings, since their reliability is thoroughly assessed below in Chapter 2.

16 This fascinating manuscript is kept in the Bibliotheca Apostolica, as the Vaticanus Latinus 3439. It is also known as the Codex Orsinianus. Anderson (1982a), p. 70, points out that the manuscript in which the drawings were collected indicates that Orsini commissioned the drawings for use in his planned Encyclopedia of Antiquity. The drawings of Plan fragments on sheets of various sizes are affixed to the pages of codex V.L. 3439, pages (Fo) 13r to 23r. The codex consists mostly of architectural drawings of ruins of Rome, of their partly-reconstructed plans, and of various related ancient reliefs and artwork.

17 See Carettoni's chapter devoted to the Renaissance drawings in *PM*, 43-52, where he includes a table listing the known, partially lost, and lost fragments that appear in the drawings of V.L. 3439 (p. 52).

18 The Renaissance drawings are evaluated in detail below, in "Accuracy of the Renaissance Drawings," Chapter 2.

remain our only source (see Fig. 1.7). This was a purely descriptive publication, but it was the beginning of scholarship on the Plan.

The following century saw the fragments transferred to the possession of the Roman people, at the request of Pope Benedict XIV, in December of 1741. In 1742 the remains were gathered on the Capitoline, and at this time Piranesi took an interest in them, as he made his famous romantically atmospheric engravings of Roman ruins and antiquities. In 1754 his publication *Antichità Romane* illustrated a number of fragments, which he employed in his efforts to create a map of the monuments of the ancient city (Fig. 1.8). Piranesi's work with the fragments was more that of an artist than a scholar, however, and he endeavored to depict the impression given by the fragments rather than to recreate their specific details. His engravings are not ideal for study of the topography they depict; but again as with Bellori's publication, a few minor fragments appear nowhere else, having been lost since 1754. Interest in the Plan fragments, encouraged by Piranesi's popular engravings, was sufficient to warrant a third printing of Bellori's book in 1764.

In the nineteenth century prominent archaeological scholars Canina and Jordan took up the use of the Plan fragments. Canina published several editions of his topographic study of ancient Rome between 1830 and 1850, which, like Piranesi's book, included a map of the ancient city that incorporated information from the Plan fragments (Fig. 1.9). Canina's illustrations of the fragments were the best in their time, and his topographic identifications were more serious and scholarly than that of his predecessors.

Jordan published the first scientific work fully devoted to the study of the Plan in 1874. He critically examined both the existing fragments and the drawings of those that had been lost, collaborating at times with Henzen and Lanciani. Jordan's edition was a great work, and much of what has been done since his time has only served to confirm and build upon the conclusions of this capable scholar. His analysis even included a division of four levels of engraving quality into "hands" of varying precision. Jordan's illustrations are beautiful engravings combining fine detail and clarity, superseded only at

times by the subtleties captured in later photographic publication (Fig. 1.10). Several minor fragments lost since the work of Jordan are securely known from his illustrations.¹⁹

The nineteenth century also witnessed the discovery of new fragments in the Roman Forum (in 1813, 1882, and 1884), and in the ruined *aula* of the Templum Pacis where the Plan had once stood (in 1867 and 1891). Most striking was the recovery of hundreds of fragments from the Farnese constructions, in the course of work on the Tiber embankment on the via Giulia in 1888 (186 fragments), and in the demolition of the *Giardino Segreto* in 1899 (451 of the minor fragments). Lanciani published a history of all the fragments up to that time and illustrated the new discoveries.

The twentieth century brought the high points of scholarly attention to the Marble Plan. In 1902 another 14 fragments were recovered from the walls of the Palazzo Farnese, and prominent topographers of the time (including Lanciani, Hülsen, Marucchi, and others) agreed to collaborate on a monumental reconstruction of the Plan, and to organize the known remains. In April 1903 this group met in Rome, and within 36 days the Plan fragments were mounted on an exterior wall in a courtyard of the Capitoline museums, physically incorporated into a spectacular giant map prepared by Lanciani for the purpose.²⁰ By 1924 conservators realized that this burst of enthusiasm had not actually resulted in the ideal conservation of the Plan fragments, as exposure to the weather was degrading them further. Plaster casts of the mounted fragments were made and affixed to the wall, while the originals, together with the minor and unlocated fragments, were transferred for storage to the Antiquarium on the Caelian Hill.

From 1927 to 1931 a new generation of topographers began to work on the Plan, including Colini, Gatti, and Carettoni. They laid plans for a great new publication of the *Forma Urbis*. A thorough photographic documentation of the Plan fragments was carried

¹⁹ It does seem odd that parts of the Plan have kept disappearing on a fairly regular basis ever since its rediscovery, but as Anderson's narrative (1982a) emphasizes, the fragments have been shuffled all over the Seven Hills in search of a permanent home over the centuries.

²⁰ Lanciani is known as one of the greatest Roman topographers, and his many publications on the subject include a famous map of ancient Rome (1901) that made maximum use of the fragments as they were then understood and placed.

out for the first time. Excavations in the *aula* in the Templum Pacis between 1931 and 1938 discovered three new fragments. In 1939, the entire collection of the Plan was again transferred, this time back to the Capitoline. Cozza undertook the definitive study of the wall on which the Plan had originally been mounted in his final clearing of the *aula* from 1947-1949, accurately determining for the first time the arrangement of the slabs and the correct orientation of the located fragments in their original state. In 1955 the peripatetic collection of Plan fragments once more set out across the city, this time arriving at the Palazzo Braschi, where they remain today.²¹ Here the collaborative group of topographers mentioned earlier carried out extensive measurement and documentation of the fragments in preparation for the long-planned great edition, which was funded by the Bank of Rome. In the final excavations of the areas around the *aula*, four more tiny fragments were recovered in 1956.

In 1960 the collaborative edition of the Plan was at last published as *La Pianta Marmorea di Roma Antica: Forma Urbis Romae* (here abbreviated *PM*), a monumental and magnificently thorough work by Carettoni, Colini, Cozza, and Gatti. With its complete photographic documentation of all 712 engraved fragments at 1/4 scale, it is the primary reference for those who undertake study of the Plan (Fig. 1.11). It has been called “perhaps the finest monument of Italian archaeological scholarship to appear in the twentieth century.”²² Complete chapters are dedicated to bibliography, the history of the plan fragments (including transcriptions of relevant personal letters and accounts from the Renaissance), the inscriptions, the *aula*, a technical analysis of the Plan, and its date, purpose, and precedents. Several useful concordances and indices organize the Plan fragments in comparison to the numbering systems used in previous editions, and also by thickness, epigraphy, building typology, and topography. It is in every respect a superb publication.

²¹ Probably expecting eviction at any moment by this point.

²² Anderson (1982a), p. 71, echoing Bloch's similar sentiments in his review of the publication (Bloch, 1961).

The topographer Rodríguez-Almeida took up the study of the Plan subsequent to this landmark, publishing several articles from 1975 to 1978, most of which were then, together with additional material, worked into a complete general supplement to the 1960 edition. This *Aggiornamento Generale 1980* (1981) includes extremely helpful line drawings of all the fragments at the same 1/4 scale as the previously published photographs (Fig. 1.12). While these drawings necessarily lack some of the fine subtleties of condition and execution that can be of interest in the study of the fragments, they provide a much clearer presentation of the Plan's engraved lines than the photographs, and are now the best way to review general features of topography illustrated by the Plan. Rodríguez-Almeida's supplementary volume includes commentary on the numerous fragments he studied or located since the 1960 edition, together with further work on the Plan's inscriptions, its mounting, and its destruction, as well as on the survey methods that produced it. It is a worthy successor to the 1960 publication. The *Aggiornamento Generale 1980* and *PM* stand together as the essential references for work with the Plan.

An average of one or two articles using or studying individual Plan fragments have appeared annually in the last two decades, by authors such as Coarelli, Richardson, Anderson, Lloyd, and Steinby, but primarily by Rodríguez-Almeida himself, who has devoted an extraordinary amount of work to the subject. The articles typically argue for a new location of a fragment, or employ the information from the fragments in studies of monumental architecture.²³ Only very rarely do they consider broader issues related to the Plan.²⁴ Rodríguez-Almeida has also compiled an extremely detailed unpublished three-volume technical file on the fragments, detailing the subtle observations he has made concerning the qualities of the marble, such as grain direction and the traces of saw marks on the backs of the slabs. These and other traits can assist in the positioning of fragments

²³ e.g., respectively, Cozza (1989) and Lloyd (1982).

²⁴ An exception is Anderson (1984), pp. 116-7, who offers a brief reconsideration of the Plan's purpose.

lacking known topography, even when they do not abut more securely-positioned fragments.²⁵

The Plan today

The preserved portion of the Marble Plan today approximates 10% of its original 235 square meters. Of this amount, roughly half (5% of the original Plan) contains topography that can be located and identified (Fig. 1.13). The other half illustrates topography of unknown location at this time.²⁶ Altogether, this preserved sample exists in about 712 fragments.²⁷ The fragments vary in size from small rubble (of about 3 in., or 8 cm average diameter) to nearly complete reconstituted slabs measuring over 5 ft. by almost 2 ft. (160 cm by 70 cm). The marble pieces range in thickness from about 1 1/2 in. to 3 3/4 in. (37 mm to 96 mm), some having rough backs and some smooth.²⁸ The condition of preservation varies noticeably, even in fragments that were originally contiguous pieces of the same slab. The vicissitudes of abrasion, burial, exposure to fire, and weathering have produced various kinds of superficial damage that can render some parts of the Plan 'blurred' and difficult to make out, while other parts still appear crisp, with clear traces of the red-orange *minium* pigment in the engraving.

The complete collection of Plan fragments is at present kept together, housed in a large mansard attic chamber atop the Palazzo Braschi (Museo di Roma). The material is held under the aegis of the Comune di Roma. The setting of the Plan is today unfortunately fairly open to the elements, air pollution, and incursions by vermin, particularly pigeons, whose droppings and even corporeal remains not infrequently add to the Plan's

25 This technical file would serve scholars as a near substitute for study of the Plan fragments in person. However, this specialized work is not yet available in published form since a sponsor has not appeared.

26 These figures were calculated by Gatti, *PM*, pp. 199-200.

27 The actual number of fragments depends on the numbering system used, and whether one counts contiguous pieces as separate fragments or as units. Regardless of the number arrived at, the amount of the original Plan preserved is clear, and that the numbering system devised by the authors of *PM* and updated by Rodríguez-Almeida serves to designate individual fragments for reference purposes. Rodríguez-Almeida has prepared a superior numbering system that would index the fragments more clearly yet, but the implementation of this system will have to wait for the next full republication of the Plan fragments.

28 This distinction has of course proven very useful in efforts to reunite or associate separated fragments.

weathering process.²⁹ The room is not well-lit, and presents significant difficulties for protracted study of the Plan. Work benches run around the perimeter of the room, and also form a large island in its center. Running beneath all of the workbenches is a lower shelf for additional space. Almost every square foot of these surfaces is covered with marble fragments large and small. The identified pieces are in numerical order when not disturbed. Those with unidentified topography are arranged in order of increasing thickness, to assist in efforts to reunite more of them. Access to the Plan is not easy, and requires constant supervision by a representative of the Comune. It is therefore extremely fortunate for those who would study and use the Plan that it has been so well-published by conscientious scholars in the two modern collections that illustrate all the pieces.³⁰

Traditional topographic significance of the Plan

The Plan has traditionally served as one of the primary sources of evidence for the study of the architectural topography of ancient Rome.³¹ Literary accounts, from historians such as Tacitus and poets such as Martial to the Regionary Catalogues of the later empire, form a second collection of such evidence.³² Archaeological investigation provides a third. Each of these divisions of topographic information assists in the interpretation of the others, with one often filling in the others' lacunae.

29 Anderson (1982a), p. 72, has also voiced serious concerns about the continuing deterioration of the Plan.

30 It would be more fortunate still if Rodríguez-Almeida's technical file could find a sponsor, since the expertise he has developed with the Plan is unlikely to be matched again, especially with the Plan under its present restrictions.

31 As mentioned before, "topography" has a particular meaning in this connection--namely, the form, temporal sequence, and location of architecture--rather than the land forms and ground relief signified by the general usage of the word.

32 For Rome the literary evidence is especially rich, if sometimes still tantalizing in its gaps. Dudley (1967) is a good introduction to the various ancient sources that offer insight into the city and its monuments. The most complete index reference is Lugli (1952-1969). Martial, an epigrammatist of the later first century A.D. and observer of the foibles of Romans across the whole social spectrum, makes numerous topographic references in his works and helps to bring life to the city in our minds (see the topographer Rodríguez-Almeida's editions of Martial, forthcoming. A preview of this work may be found in some of his recent articles, such as [1989] and [1992]). The "Regionary Catalogues" are the *Curiosum* and the *Notitia*, two fourth-century documents which cite lists of the regions of the Rome and the monuments and landmarks contained therein, together with other statistical information about topographic features (text in Jordan [1907], repr. 1970). The Regionaries will be taken up in detail in Chapter 4.

Many significant buildings of Rome known to us through literature are partly or completely destroyed, or are unavailable for archaeological investigation owing to the overbuilding of the modern city. The Plan is especially valuable in these cases, sometimes offering the only available data on the form and dimensions of a building or monument. For example, the Temple of Deified Claudius (begun by Agrippina, almost destroyed by Nero, and finally completed and dedicated by Vespasian), is mentioned only in a few literary passages.³³ The large platform of the temple precinct (about 590 ft. by 656 ft., or 180m by 200m), bordering a section of the Aqua Claudia on the Caelian Hill, may be located by reference to these sources, but remains of the temple itself have never been found.³⁴ The Marble Plan, in conjunction with an important Renaissance drawing of a lost Plan fragment, provides an illustration of this lost temple (Fig. 1.14), and of parallel features occupying the precinct that are presumably botanical in nature (arbors, hedges, or gardens).³⁵ Whatever the exact identification of these features, the Plan serves to present the structure of the temple and to place its precincts in the same class as those of other porticoes (such as the Porticus Liviae) that were characterized by extensive formal plantings.³⁶

The Templum Pacis, the original location of the Marble Plan itself, is another structure known primarily from literature that is greatly illuminated by the Plan (Fig. 1.15). This great monument was vowed by Vespasian in A.D. 71, and dedicated in 75, as a

33 Suetonius, *Vesp.* 6; Aurelius Victor, *Caes.* 9.7; *Epit.* 9.8; Frontinus 2.76; Martial, *Spect.* 2.9-10.

34 See Nash (1968), 1.243-48 for references and details of the platform and its perimeter as known from archaeology; also Coarelli (1974), pp. 165-167, and Fishwick (1991). The north side of the large platform was re-used by Nero for a decorative façade of fountains and water-play, facing a part of the sprawling Domus Aurea, or "Golden House" palace.

35 This illustration provided by the Marble Plan is in fact so helpful that Richardson (1992), p. 87, treats the specifics gleaned from it as precise and accurate data. This is somewhat too trusting of the Plan, given the kinds of detail errors that characterize it (see below, "Accuracy of the Marble Plan," Chapter 2), but more importantly Richardson does not always specify which parts of his description and interpretation are drawn from archaeology and which are from the Plan illustration. This distinction is very important, and the clearer picture of the Plan's reliability presented in this dissertation should increase the rigor with which the Plan's data are handled. The Temple of Divine Claudius will be treated in more detail below, in "Temples on the Marble Plan," Chapter 2.

36 Pliny, *NH* 14.11 records that a single vine stock shaded all the open strolling areas of the Porticus Liviae.

commemoration of the end of the Jewish War and the bringing of peace to the empire.³⁷ Filled with art, including the spoils of war and the treasures of Nero's dismantled Domus Aurea, the Templum Pacis was one of the finest buildings in Rome, and also included important libraries. While the few small areas of excavation carried out around this monument firmly establish the location and overall dimensions of the colonnaded plaza (ca. 300 x 370 ft., or 110 x 135 m), "we can learn nothing about the architecture of the Templum Pacis from literary sources...the reconstruction of its architecture must rely primarily on the correct arrangement and interpretation of four fragments of the *Forma Urbis Romae* that give a schematic representation of it."³⁸ The result of this analysis of the Plan, in concert with the scanty archaeological evidence, is a remarkably full understanding of the form of the complex: an open square enclosed by colonnades and exedrae, an apsidal temple at one end woven into the structure of the colonnade and flanked by the libraries, and a set of features regularly laid out in the plaza which may be gardens or pools.³⁹ Important questions remain, as the surviving portion of the Plan does not clarify everything, but it does provide a great deal where there would otherwise be virtually no information.⁴⁰

The Portico of Pompey is another significant monument whose form is known almost exclusively from the Marble Plan. This portico was built adjacent to Pompey's theater, and dedicated by him in 52 B.C. The portico served the purpose recommended by the architectural writer Vitruvius, namely that it should provide theater spectators with shelter

37 Suetonius, *Vesp.* 9.1; Josephus, *BJ* 7.158. See further discussion of the Templum Pacis below, "Templum Pacis: the setting of the Plan."

38 Anderson (1984), p. 107. The fragments illustrating the Templum Pacis are fr. 15a, b, c, and 16a.

39 The principal synthesis of all this information is still Colini (1937). It is no coincidence that Colini went on to be one of the topographer-authors of *PM*. More recent discussion can be found in Riemann (1942); Coarelli (1974), pp. 132-4; Anderson (1984), pp. 101-118, and in Bauer (1977), p. 316 ff., and (1976/1977), pp. 119-48. As Anderson (1984), p. 101, observes, Bauer's interpretation is highly speculative; Richardson (1978), pp. 359-69, refutes Bauer's reading in favor of a more conventional interpretation.

40 Richardson (1992), p. 287, notes for example that access to the Templum Pacis remains one of the most puzzling issues connected with it; there is as yet no evidence for a monumental entrance such as we would expect for such a showplace. Rodríguez-Almeida has pointed out that an off-axis entrance through the Porticus Absidata is documented by the Plan (*FUM*, p. 95). The regular features in the plaza, still enigmatic, are discussed by Lloyd (1982), who favors a botanical interpretation; Anderson (1984) suggests the equally likely interpretation as pools.

in case of rain and a space for stage materials.⁴¹ However, as a number of literary sources attest, the portico was more important as a splendid and beautiful park which became one of the most popular strolling destinations in Rome.⁴² Landscaped with pollarded shade trees, it also housed an outstanding collection of paintings, and thus stood firmly in what would become an especially Roman genre of luxurious public porticoes offering refined atmosphere.⁴³

While the shape and size of Pompey's theater are known from the buildings that still preserve the outline of its substructures, the portico itself is almost completely unknown to archaeological investigation.⁴⁴ Only a portion of the perimeter of the complex near the Area Sacra di Largo Argentina has been identified through excavation, and these portions were very little more than parts of the portico's latrines.⁴⁵ Fragments of the Plan provide much welcome information here, delineating the extent and design of the colonnaded portico and its exedrae, possibly indicating even the placement of trees, and including a symbol representing the arch where Augustus placed the portrait statue of Pompey at the foot of which Julius Caesar had been murdered (Fig. 1.16).⁴⁶ Again, the Plan lacks details and presents some ambiguities, but its image of the Portico of Pompey is of great value for the interpretation of this monument and its place in the history of Roman porticoes.⁴⁷

These examples are only a few of the many cases where the Plan has been the key to a clearer picture of monuments known from literature, but partly or completely unknown through archaeology. In other cases, the Plan's value is apparent in the aid it provides to

41 Vitruvius 5.9.1.

42 Descriptions and praises in this respect include Cicero, *Fat.* 8; Catullus 55.6; Propertius 4.8.75; Ovid *Ars Am.* 1.67-68, 3.387-88; and Martial 2.14.10, 11.1.11, 11.47.3.

43 On the plane trees: Propertius 2.32.11-16; on the paintings: Pliny *NH* 35.59, 114, 126, 132.

44 Nash (1968), 2.423-428, includes an aerial photo which illustrates the preservation of the outline of the theater in modern buildings.

45 G. Marchetti-Longhi (1960), pp. 74-79; Nash (1968) 1.147.

46 The fragments illustrating the Portico of Pompey are those collected as fr. 38. Suetonius records the placement of the statue by Augustus (*Aug.*, 31.5).

47 The famous statues and artwork are of course not indicated, and the dotted square symbols can be interpreted as either columns or trees, and the basins for decorative water may be indicated but are not identified certainly as such.

excavators of ruins whose identification would be uncertain without the graphic guide of the Plan. One example of this kind of assistance is the case of the Saepta Julia.

The Saepta was Julius Caesar's replacement for the old Republican voting enclosure in the Campus Martius. Caesar had grandiose plans for this new construction by 54 B.C., but the structure was built partly by Lepidus and finally completed by the redoubtable Agrippa, who dedicated it in 26 B.C. Like some of the other monuments discussed above, the Saepta was a colonnaded enclosure, a popular destination for urban strollers, and it was also enhanced by a collection of fine artwork.⁴⁸ From literary accounts we know that it was put to many uses that required the large space for assemblies. Gladiatorial games sponsored by several of the Emperors were held in the Saepta, Nero staged a gymnastic exhibition there, the Senate convened there, and assemblies of the people could be called there by emperors for public communications.⁴⁹ It also contained a market, as did many other porticoes, with this one known for luxury goods. The two colonnades defining the long sides of the Saepta had separate names, the Porticus Argonautarum and the Porticus Meleagri, and they are listed separately in the Regionary Catalogues of the fourth century A.D.

While the literary sources provide a diverse and colorful picture of the uses of the Saepta, in all the various citations there cannot be found a description of its size or design. This illustrates the fact that a building may figure prominently in the literature without its form ever becoming clear. Surviving portions of the Plan include inscriptions identifying both the Saepta and the Porticus Meleagri, and indicate some of the monument's structure while assisting in determining its location (Fig. 1.17). This evidence allowed Gatti to

48 Cicero mentions Caesar's early plans for the Saepta in *Ad Att.* 4.16.14. Lepidus' contribution is recorded by Cassius Dio, 53.23.2. On the Saepta as a place for strolling: Seneca describes it as one of the most popular sites in Rome (*Ira* 2.8.1); Statius informs us that even after the fire of Titus in A.D. 80 it was still as popular as ever with the urban pedestrians (*Silv.* 4.6.2); Martial offers several references attesting to its pleasure and crowds (2.14.5, 57.2, 9.59.1, 10.80.4). On the artwork at the Saepta: Pliny *NH* 36.29.

49 Gladiatorial games in the Saepta are mentioned by Suetonius in *Aug.* 43.1, *Calig.* 18.1, and *Claud.* 21.4. Nero's gymnastic show is recorded in Suetonius, *Nero* 12.4. The Senate met in the Saepta during the *Ludi Saeculares*, or Century Games (*CIL* 6.32323.50). Public assemblies for the emperor in the Saepta are cited by Suetonius, *Tib.* 17.2; and Cassius Dio 56.1.1.

identify as the Saepta the remains of a huge enclosure he excavated from 1934 to 1937, between the Pantheon and the Baths of Agrippa on the west, and the Temple of Isis Campensis and Serapeum on the east.⁵⁰ Put together, this evidence from archaeology and from the Plan allows us to reconstruct a huge enclosure over 1000 ft. long by almost 400 ft. wide (310 m by 120 m), with the two porticoes stretching between multiple entrances in the north and the Diribitorium (vote-counting building) adjoining to the south. With the structure of the Saepta thus clarified, work has been carried out in an effort to reconstruct how voting might have taken place within it.⁵¹

In another example, the Ludus Magnus was discovered by Italian excavations in 1937. An amphitheater within a rectangular multistoried enclosure of numerous small rooms, this was the largest of the four gladiatorial training schools established by Domitian near the Colosseum. When Colini and Cozza continued the investigation of the Ludus Magnus in 1960/61, they were assisted in their interpretation by the Marble Plan (Fig. 1.18). Richardson notes, in his summary of their work, that “with the help of the Marble Plan...an almost complete understanding and reconstruction are possible.”⁵² In this instance, the excavations recovered nearly half of the structure, and the Plan allowed the confident extrapolation of the style and layout of that architecture into a nearly symmetrical plan.⁵³

Finally, the Theater of Balbus was the third permanent stone theater built in Rome, following those of Pompey and Julius Caesar (whose theater would be completed mostly by Augustus, and dedicated in the name of Marcellus).⁵⁴ As listed in the Regionary Catalogues, the Theater of Balbus held 11,510 *loca*, which is considered to be space for an audience of about 7,700.⁵⁵ It was dedicated in 13 B.C., in the same year that the Theater of Marcellus was formally inaugurated. Like other theaters, the Theater of Balbus

50 Gatti (1934) and (1937). See also Lugli (1938).

51 Taylor (1966), pp. 47-58, working with L. Cozza.

52 Richardson (1992), p. 237.

53 On the Ludus Magnus, see Colini and Cozza's complete publication (1962).

54 Augustus, *RG* 21; Suetonius, *Iul.* 44; Cassius Dio 43.49.2-3, 53.30.5-6.

55 Richardson (1992), p. 381.

was used for more than theatrical performances; as we have seen with the Saepta, for example, locations that allowed mass assemblies were employed by the Romans for a variety of purposes. Combat games were frequently among these applications, and the Theater of Balbus was dedicated with an extravagant spectacle of such games.⁵⁶

The Theater of Balbus is known from a number of literary references that include some description of the historical circumstances that brought L. Cornelius Balbus to build it, as well as references to parts of its decoration. However, the location of this theater was supposed for a long time to be beneath the modern site of the Palazzo Cenci and the church of S. Tommaso.⁵⁷ Radial structures beneath the Palazzo Mattei di Paganica were long thought to belong to the curved end of the Circus Flaminius, until Gatti discovered the true location of this Circus nearer to the Tiber.⁵⁸ This discovery allowed the radial remains under the Palazzo Mattei di Paganica to be attributed to the Theater of Balbus. “This was then confirmed by moving the fragments of the Marble Plan near the inscription THEATRUM BALBI to a new location in this vicinity and by the discovery that they fit perfectly with their surroundings.”⁵⁹ As a result, the theater is now securely identified, and its adjoining complementary structure, the Crypta Balbi (shelter for the spectators) is also located through the assistance of the Plan (Fig. 1.19).

The Plan's record of non-monumental architecture is another component of its valuable topographical information. Non-monumental architecture has traditionally been of less interest than grand monuments; when, for example, the emporium wharf district of Rome was excavated at the end of the nineteenth century, records were hardly kept at all. In the twentieth century the warehouse district, with its crucial role in the maintenance of Rome's food supply, has grown in scholarly interest, and the Marble Plan's especially good

⁵⁶ Suetonius, *Aug.* 29.5; Cassius Dio 54.25.2

⁵⁷ Nash (1968), 2.414.

⁵⁸ It is now known that the Circus Flaminius was an open public area rather than an architecturally formalized circus. The space was used for various kinds of assemblies, displays, and spectacles. This analysis was originally asserted by Wiseman (1974) and (1976). For later summaries see Humphrey (1986), pp. 540-45, and Richardson (1992), p. 83.

⁵⁹ Richardson (1992), p. 381.

images of this region have proven very illuminating, offering almost the only view of this vital part of the ancient city's structure.⁶⁰

While the Plan has assisted in the understanding of buildings known from literature and in the identification and illumination of partially excavated or exposed remains, it has also provided architectural information beyond the realm of either of these lines of investigation in its illustration of monuments otherwise unknown and undiscovered. Over 650 fragments show architecture that is unidentified or of unknown location. Foremost among the monuments appearing in these samples of the ancient city is the large structure referred to as the Adonaea.⁶¹ The Plan depicts this as a large colonnaded rectangular complex measuring over 340 by 275 feet (ca. 104 m by 84 m), and the placement of the inscription suggests that its extent may have been much larger (Fig. 1.20). The Adonaea has been the subject of much speculation as to its function and location, neither of which is clarified by the Marble Plan. Lloyd has reconstructed it as a "Garden of Adonis," a shrine covered with arbors appropriate to the worship and commemoration of Adonis, and some version of this is likely the correct interpretation.⁶² This complex is not known from literature, and its size makes it difficult to place anywhere in Rome.⁶³ The location of the Marble Plan's Adonaea has provoked continuing interest even in recent years as a topographic challenge.⁶⁴

60 See Rickman (1971), pp. 87-122, for discussion of the warehouse wharf district and the importance of the Marble Plan evidence for understanding warehouses in Rome.

61 The name is reconstructed from a fragmentary inscription which now reads no more than ADO-. A Renaissance drawing from the Vatican collection (V. L. 3439 Fo 18r) was made when the fragment was more complete, and in this drawing the inscription is recorded as -DONAEA.

62 Lloyd (1982), pp. 95-100.

63 Unless it is to this structure that Philostratus refers when he describes a "Court of Adonis" as part of the Palatine palace where Domitian made sacrifices to Minerva and received the visitor Apollonius of Tyana (Philostratus, VA 7.32). This reference, being the only one available, has been employed by numerous topographers to support a location for the Adonaea near the east side of the Palatine, in the Vigna Barberini (the only area where it could not be ruled out); see for example Bellori (1672), p. xi, Nibby (1838), p. 450, Jordan (1874), p. 60 (pl. 10.44); Pinza (1910), p. 13-15; Sulze (1940), p. 513; and Bigot (1942), pp. 31-32 and 9, fig. 5. Arguing against this supposition are Hülsen (1903), pp. 113-8, Grimal (1969), p. 187, Bianchini (1738), p. 139, and Platner and Ashby (1929).

64 See, e.g., Royo (1985); Grenier and Coarelli (1986); Gros, Lenoir, et al. (1987), Lenoir et al. (1987), and Simpson (1987).

Significance of the Plan for the study of Roman mapping

Agrimensores and the context of Roman field survey

Besides its utility as a topographic data bank, the Plan is also important as a rare example of the Roman tradition of urban survey and architectural mapping. This tradition of *mensores aedificiorum* (building surveyors) was the urban complement to the much better-known tradition of the *agrimensores*, or field surveyors. To provide a comparative context for a discussion of the work of the *mensores aedificiorum*, our knowledge of the Roman field surveyors will be reviewed.

Agrimensores served the Roman state in many large-scale projects, especially during and after the reign of Augustus, who codified some of the survey practices for administrative consistency.⁶⁵ The need for field survey came primarily from Roman expansion and colonization. As territory was conquered and annexed, colonists and veterans were sent out to take up residence in newly-established towns. Veterans' colonies served several functions, among them rewarding soldiers for their service with land of their own, and serving as emplacements of Roman power and culture for security in frontier territories. Field surveyors imposed a Roman administrative framework on landscapes, marking it out in regular divisions for the purpose of allotment and taxation. While the *agrimensores* might be responsible for assisting in the layout of a new town or engineering work, their larger responsibility was the survey and division of the great country hinterlands beyond the urban settlements. The practice of measuring this land into regular parcels was called centuriation,⁶⁶ and the grid-like traces of this work are still visible (especially from the air) across hundreds of square miles of former Roman territory in Italy and throughout the Mediterranean lands of the Empire.⁶⁷

65 Dilke (1987), p. 212: "Hyginus Gromaticus, author of a surveying treatise in the *Corpus Agrimensorum*, tells us that Augustus ordered that the coordinates of surveys be inscribed on the corners of 'centuries' and that he fixed the width of main, intermediate, and subsidiary roads within centuriated areas."

66 The standard manner of division was a grid of squares 20 Roman *actus* on each side (the *actus* being 120 Roman feet, this works out to about 2,328 English feet). The area within such a square, a *centuria*, was divided into 100 *heredia*, or heritable individual tracts of land.

67 Bussi and Vandelli (1985) collect and illustrate all the information on centuriation, including a history of its modern rediscovery in Northern Italy and North Africa. Also see the annotated bibliography and

The Corpus Agrimensorum

With imperial expansion and with a centralized authority interested in keeping track of territory for fiscal reasons, it is not surprising that a strong tradition of Roman survey evolved. That this tradition existed would be apparent from the aerial photos alone, but we are fortunate to have a substantial literary component to enhance this knowledge in the form of the *Corpus Agrimensorum*.⁶⁸ This is a collected body of literature spanning the first through the fourth centuries A.D., consisting largely of surveyors' manuals and handbooks. In these works are described the means, methods, purposes, and practice of Roman land survey. Preserved with the text are many small schematic illustrations that copy those originally supplied with the manuals (see Fig. 1.21). The result is a reasonably complete understanding of the *agrimensores* and their work. The illustrations accompanying the text serve as examples for the student learning the art and theory of surveying; among other points they demonstrate methods for reconciling grids surveyed at different periods, the use of natural features as boundaries for surveyed land, and the incorporation of major roads into the survey baselines. The text discusses the specifics of how centuriation patterns are laid out and how practical difficulties may be dealt with by the surveyor.

The treatises in the *Corpus Agrimensorum* are concerned chiefly with two matters: the methods of surveying, and the designation of legal status and tax liability for the land parcels delineated by surveyed boundaries. Therefore the several authors also spend time illustrating the distinction of various kinds of land, such as "public forest and common pasture," "given and assigned land," "granted," "excepted," "restored," and other designations. Each of these kinds of land would be subject to a particular kind of tax obligation or exemption, and it is for reasons of taxation that this legal status was

studies in Clavel-Leveque (1983). Classic works on the subject are Schulten (1912) and (1900), Cantor (1878), and Bradford (1937).

⁶⁸ See the edition of Thulin (1913), reprinted in 1971. The standard work on the subject has been Blume et al., eds. (1848-52), reprinted in 1967. Dilke has published a more recent English overview of the subject (1971). See also Hinrichs (1974).

considered important.⁶⁹ Only one of the illustrations from the manuscripts of the *Corpus Agrimensorum* resembles the product that a surveyor's work would actually produce, the rest of them being educational schematics, mere teaching figures or illustrative "cartoons," which include pictorial elements and 'bird's-eye' perspectives rather than strict survey diagrams (Fig. 1.21). The one example of a survey diagram presents delineated boundaries, inscribed as recommended in the texts, with annotations of ownership, measurements, and legal status (see Fig. 1.22).

Hyginus Gromaticus, one of the authors of the *Corpus Agrimensorum*, refers to the standard practice for recording this kind of survey work.⁷⁰ Copies of the official cadastral maps produced were rendered into bronze in duplicate, one copy to be archived locally, and the other to be sent to the Imperial record office.⁷¹ Each copy was accompanied by a set of the necessary explanatory notes, produced on papyrus at first and later on vellum and parchment. These materials used for recording the cadasters were among the most perishable of antiquity. Papyrus and the other organic writing sheets are only rarely preserved from early Roman Imperial times, and then in extraordinary circumstances, such as the desert climate of Egypt (the papyri of Karanis), the volcanically-buried condition of Herculaneum (the library of the Villa dei Papyri), or the anaerobic damp soil of Britain. This decay factor means that no original survey records on organic sheets have survived. The bronze tablets that would have been produced in great numbers, stored in the Imperial archives, would have been durable enough to survive the centuries, but bronze was a desired material throughout the Middle Ages, and such detritus from the old Roman world

69 While survey records might indeed be consulted for ownership disputes, and the recorded work of the *agrimensores* would certainly make this possible, the writers of the *Corpus Agrimensorum* are more concerned with the particulars of legal status and the relationship between landholder and government than between landholders and each other. Boundary stones were marked to delineate the surveyors' work on the ground, and these would serve to assert clearly the regular land parcel margins. Matters of private ownership were more the province of the *mensores aedificiorum*, as will be shown below.

70 Hyginus Gromaticus, *Constitutio limitum (Laying Out Boundaries)*, 165-67 (note 11).

71 "Cadastral" meaning here "large-scale land survey carried out for taxation purposes." (Dilke [1987], p. 220.)

was almost universally consigned to the smelters. Not a single bronze Roman cadastral map is known today.

The Orange Cadasters

Aside from the illustrative example map from the *Corpus Agrimensorum*, one example of the actual records created by *agrimensores* survives. This is the collection of stone fragments known as the cadasters of Orange, a French city known as Arausio to the Romans (Fig. 1.23). Most of the fragments were discovered between 1949 and 1951. In 1962 these unique surviving portions of an original cadastral map became quite a bit more fragmentary when the museum floor at Orange collapsed. However, Piganiol fortunately preserved careful records of the lost pieces, and the cadasters have now been completely restored and are once more on display in the municipal museum.⁷² Though very incomplete, the Orange cadasters provide interesting information. Three separate engraved cadastral maps were originally composed of multiple stone slabs mounted on walls in the city's *tabularium*, or record office. A partially preserved inscription helps to explain the existence of this unusual document, referring to the emperor Vespasian's efforts to reclaim taxes from state lands which had been encroached upon by private individuals.⁷³

Vespasian had come to power after the bloody civil wars of A.D. 69, and as emperor inherited the grievous financial condition of the treasury left by the profligate emperor Nero. Vespasian was a responsible and pragmatic leader, and one of the steps he took to stabilize the state was the replenishment of Imperial funds by the judicious administration of public lands. This included the selling of *subseciva* lands to the colonies. *Subseciva* lands were unallocated areas within defined or centuriated colonial territory, and they appeared on the Imperial archive copies of cadastral maps listed as state land. The productive sale of these parcels to local authorities is discussed in the *Corpus*

⁷² This was the case as of December, 1994 (J. Anderson, pers. comm. 1/96).

⁷³ McCrum and Woodhead (1961) record the inscription, p. 122 no. 447. The reclamation of state lands encroached upon by private individuals had been an ongoing concern for other emperors including Claudius and Nero as well.

Agrimensorum by a famous senator of Vespasian's time, Sextus Junius Frontinus (best known for his informative treatise on the aqueducts and water supply of Rome).

Vespasian also sought state income by imposing stricter tax collection where illegal settlement had encroached upon state lands; such encroachment had occurred at Orange. The colony of Arausio had been founded for veterans by 35 B.C., with each veteran receiving a customary land grant. In the century since its foundation, some of the surveyed lands not allocated to veterans but claimed by the state had been occupied without payment by the local Gallic population. The stone cadaster ordered by Vespasian would serve as a large public record to clarify exactly what rents would be expected from the owners of specific parcels.

Accordingly, the Orange cadasters include none of the pictorial elements or bird's-eye perspectives seen in the teaching illustrations of the *Corpus Agrimensorum*. Here instead is a true plan-view record to scale, with inscribed notes of measurements, ownership, and taxes due (Fig. 1.24). Roads and rivers appear, but as boundary elements (as prescribed in the text of the *Corpus Agrimensorum*), not as pictorial features. Architecture, which had appeared in the teaching illustrations of the survey manuals in symbolic forms, does not appear at all in the surviving fragments of the Orange cadasters. As far as we can tell, and as we would expect, the cadasters are exclusively concerned with land boundaries and legal status, not with architecture that may have existed on that land.

Mensores Aedificiorum and the context of Roman urban survey

The Orange cadasters exhibit a quite comprehensible use of the work of *agrimensores*, and the functions of these professionals in surveying land for allocation and taxation purposes are reasonably well understood, thanks to the combination of literary attestations and archaeological traces. The tradition of the *ensores aedificiorum* is, by contrast, much more dimly perceived. That this was a separate tradition is clear from its exclusion from the *Corpus Agrimensorum*, where it is referred to only briefly. While the two fields

would certainly be related in some aspects of theory, method, and even instrumentation, the *Corpus Agrimensorum* provides ample proof that each field had numerous concerns particular to itself, quite enough to make the two distinct.⁷⁴ We are left to investigate the parallel discipline of the urban surveyors through the few preserved traces of their work, since no textual information is available to assist us here.

As with the work of the field surveyors, the ordinary records of the *mensores aedificiorum* on bronze tablets and on organic sheets have all perished. What remains is a small collection of mostly very incomplete plans in stone and mosaic. The reasons for the transcription into stone of each of these plans may only be supposed, as none of them includes legends or keys explaining their existence. However, a review of these few stone plans will provide at least some background against which we may consider the Marble Plan. This study will show that the Roman urban survey tradition, as might be expected, had very different concerns than field survey, and expressed itself with its own set of standard graphic conventions and approaches to the representation of surveyed architecture.

Though individually somewhat cryptic, the few surviving fragmentary architectural plans, when considered together, can illuminate the conventions and concerns of the urban surveyors. The consistency between these plans supports the assertion that these are representatives of the developed urban survey tradition. The fact that this series offers direct insight into the otherwise lost work of the *mensores aedificiorum* has been insufficiently appreciated.⁷⁵ These plans form a consistent body of useful maps, and it is

⁷⁴ Until now this distinction has not been made. Harvey (1980), p. 130, for example, states that "in the Roman Empire there were two parallel traditions of map-making, one of picture-maps and one of scale-maps." This statement is helpful because it separates two traditions that should not be confused. But this dichotomy blurs the important distinction between field and urban survey, even though it is true that they were both scale map traditions. The present study will show that Roman field and urban survey were substantially different in approach and in record-keeping, though similar survey methodology was probably employed.

⁷⁵ Dilke (1985), p. 107, mentions (in the chapter entitled 'Roman Stone Plans') only two of the seven urban survey stone plans besides the *Forma Urbis*, and includes no commentary on their significance for understanding the tradition that produced them. P.D.A. Harvey (1980), pp. 130-31, refers to the full body of Roman stone plans and realizes that they represent the urban survey tradition; he stops short of investigating the uses and implications of each plan, but the stone plans take their proper place in his wide-ranging consideration of his subject. Dilke (1987) at least mentions most of the Roman stone plans

only against the background established by this series that the *Forma Urbis* can be properly assessed.

The Isola Sacra Plan

This fragment of marble (ca. 7 in. by 6 in., 18 cm by 15 cm) was discovered by Becatti in excavations between the world wars at Isola Sacra.⁷⁶ The fragment was found in one of the tombs that line the road connecting Portus and Ostia, where it had been re-used as a construction element. As a result of this abuse, its surface is badly damaged, but the regularity of the inscribed lines makes a nearly complete reconstruction possible (see Fig. 1.25).⁷⁷ The Isola Sacra plan clearly depicts architecture of a type known from Ostia and other Roman cities. Carettoni identifies the structures as common *tabernae* and workshops.⁷⁸ Guarducci speculated that the architecture represented might have stood somewhere in Ostia or Portus, so much does it resemble urban fabric of warehouses and one-room shops (*tabernae*) regularly encountered in those locations.⁷⁹ The care in the plan's execution, and the ruled regularity of the lines suggests that the surveyed plan from which it derives must have been equally meticulous. This assertion is supported by the three inscribed numbers which accompany the architecture of the plan. These indicate measurements in Roman feet, to confirm the accuracy of the planimetry.⁸⁰ The walls are indicated with "double lines," as Carettoni calls them, or "outlines" as I will call them

(pp. 225-229), and although he describes some of their individual features he still does not apprehend their significances. Carettoni's treatment of Roman architectural plans in *PM* (pp. 207-210) was fully complete for its time and exceptionally well-illustrated, but was again descriptive rather than interpretive.

76 See G. Becatti (1945-1946), and R. Calza (1947), p. 36 n. 191. Isola Sacra is the island surrounded by two branches of the Tiber and the sea, between Ostia and Portus (the ports of Rome). The plan fragment is kept in the Ostia Museum with terracotta plaques and other material from Isola Sacra.

77 Published for the first time in *PM*, p. 208 and pl. Q fig. 48.

78 *PM*, p. 208.

79 Becatti (1945-6), p. 145.

80 Carettoni (*PM*, p. 208) prefers this identification over Becatti's suggestion (1945-6, p. 145) that the numbers identify the *insulae* like addresses. Numbers certainly indicating measurements are known from several other Roman plans, as will be seen below, and their use in the same way here is certain. There is no need for the caution expressed in Dilke's statement that these numbers "may" denote measurements (in Harley and Woodward [1987], p. 226).

below.⁸¹ The wall architecture is straightforward here and easy to read from the graphic representation. The plan also incorporates symbols which require a knowledge of Roman plan symbols for interpretation, namely the V symbol for a staircase, with or without parallel lines filling its interior.⁸² The V appears twice on the Isola Sacra plan, once as a right triangle with parallel lines, and once as an empty isosceles triangle. Many such minor variants on the basic symbol are known; all appear to have the same meaning.

The original use of the Isola Sacra plan is unknown, and it is also unclear whether the preserved fragment was part of a larger composite plan. It is possible that the numbers indicate frontages for which taxes or rents were assessed, and that this plan may have been created for public posting to clarify the legal obligations for either owners or renters of the properties represented. Such a hypothesis would be consistent with the care of the plan's execution and with the provision of measurement numbers.

The Via Labicana Plan

Next for consideration is the Via Labicana plan (Fig. 1.26). This fragment of a plan, engraved in marble, was discovered between the Baths of Titus and the Colosseum in 1890, in the demolition of a wall near the Via Labicana.⁸³ It is only a small fragment, its preserved surface measuring about 4 3/4 in. by 6 in. (12 cm by 15 cm). Nonetheless, it carries enough information to be interesting when considered together with the other plans. Like the previous example, the Via Labicana plan depicts private architecture in plan view, carefully ruled and engraved. Also like the previous example, this fragment bears annotation, in this case names of proprietors.⁸⁴ These are probably the owners of the properties rather than renters, since individual rooms are not identified, while the beginning of an inscription appears that would have run across a number of the *tabernae* in

81 In Chapter 2, "Lines."

82 This understanding of the staircase symbol is clear from its numerous appearances on the *Forma Urbis*, one supported example being those in the Circus Maximus, which may be compared directly to archaeological evidence (see below, Chapter 2, "Accuracy of the Marble Plan").

83 Gatti, *PM*, p. 207.

84 *ibid.*

this row (it seems most likely that typical renters would have taken individual chambers rather than entire rows). The inscriptions, and the attributions, are too fragmentary to allow identification of the location represented. The style of depiction resembles the Isola Sacra plan, in that the double-line or outline convention is employed for all the walls appearing on the plan.

Whatever its original use may have been, it is clear that this plan was intended to show precisely delineated properties with annotations of the owners' names. This recalls the practice of the field survey maps, where land parcels were similarly delineated and identified for tax purposes. In the case of this plan, ownership must have been regarded as stable enough to warrant engraving the information in marble. The fact that it is in stone suggests that it was probably intended for public posting. One would assume that ordinarily, anyone interested in such information would have consulted versions on papyrus or parchment (which would have been easier to create and to update).

The Amerino Plan

Another plan clearly belonging to this genre is now lost, but is preserved in a drawing from the latter half of the sixteenth century. This is the Amerino Plan, surviving in a copy made in 1603 of an epigraphic manuscript, the *Antiquae Amerinorum lapidum inscriptiones* of Arciprete Cosimo Brancatelli (Fig. 1.27).⁸⁵ The drawing depicts an ancient plan fragment very similar to the ones we have just considered.⁸⁶ It was entitled “on a fragment of marble at S. Secundus, at an altar outside the city of Amerino.”⁸⁷ This drawing, generally similar to the designs of the Marble Plan, yet different in particulars, was thought to be a forgery by the early topographic authorities Jordan and Hülsen. It

85 In Cod. H 180 inf. (fo 48 v-49 r) of the Biblioteca Ambrosiana. The copy was made in 1603 by Cardinal F. Borromeo. (Gatti, *PM*, p. 208)

86 Gatti even supposed that the Amerino drawing might have depicted a fragment of a larger map to which the Via Labicana fragment might have belonged. This supposition was reasonable at the time, but may now be seen as unnecessary. The discovery since that time of The Isola Sacra and the Via Anicia (to be treated next) plans make it clear that stone plans were not quite so unusual as they seemed in 1890.

87 *in fragmine marmoreo / apud S. Secundum extra urbem Ameriam ad altare.*

was not until the discovery in 1890 of the Via Labicana fragment that Gatti was persuaded of the Amerino drawing's authenticity; the two plans are extremely similar in having double-line/outline convention for the walls, and names in the genitive, presumably (once more) of property owners. In 1960 Carettoni, further convinced by the similar style of the newly-published Isola Sacra fragment, agreed that the Amerino drawing is in fact authentic.

The Amerino drawing presents a section of architecture in plan view, of a type with which we are now becoming familiar. Walls in outline are sometimes drawn as 'buted' together at T intersections, as in both the previous examples. Carettoni interpreted the partial inscriptions to indicate ownership of the properties by imperial freedmen--(*liberti Caes)aris: Proclus, Numonia(nus?)*, *Sallustian(us?)*, and *Num(mius?)*).⁸⁸ Single lines also appear in this plan, unlike the previous examples. From the architectural context they may be read without doubt as *edge lines*, marking the edges of roofs supported by pilasters (indicated by the small rectangles and outline L shapes). The distinction between the conventions for depicting wall lines and roof lines is clear and unambiguous. Therefore, a courtyard with a colonnaded walk surrounding it appears in the plan, and a covered portico runs before the tabernae fronting the series of larger rooms to the left of the courtyard. Of particular significance is the use in this plan of the 'V' staircase symbols. Their appearance here contributes to the argument for a consistent tradition of architectural plan conventions which would have been used by the *mensores aedificiorum*.

The Via Anicia Plan

It is pleasing to note that a further important discovery for the history of Roman urban map-making has been made in recent years. This is the Via Anicia plan, an engraved fragment of white marble which came to light in 1983 in Trastevere (Fig. 1.28).⁸⁹ The

⁸⁸ *PM*, p. 209.

⁸⁹ See Conticello de' Spagnolis (1984) for the initial publication of the Via Anicia plan, and Rodríguez-Almeida (1988) for important corrections to her interpretations.

slab measures 12.6 in. x 11.6 in. x 0.8 in. (32 cm x 29.5 cm x 2 cm).⁹⁰ The topography represented may be located with certainty, as it shows not only the banks of the Tiber but the temple of Castor and Pollux, an unusual design which is labeled with an inscription.⁹¹ Clearly not the Temple of Castor in the Roman Forum, this is the Temple of Castor and Pollux mentioned by Vitruvius as *in Circo Flaminio*.⁹² Private architecture appears along with the public temple, and this is also identified with inscriptions in the genitive. One complete inscription reads “[belonging to] Cornelia and her associates.” Four numerals are present along the frontage of a line of tabernae. The walls are indicated in outline, as we have seen before, and the single line with squares for pilasters appears depicting covered porticoes in front of the shops. The customary V (with lines) staircase symbol is also employed. We can be sure that a portico in front of the shops is indicated along the Tiber bank, rather than an arcaded terrace, by noting the L-shaped pilasters that bear arches in two directions where the alley leading away from the river path intersects the line of the portico. A broad flight of steps is indicated on the approach of the temple, and likewise in the entry to the building to the left of the temple. Similar stairs were indicated on the Amerino drawing. The plan is finely worked, with careful delineation.

In an extraordinary coincidence, this fragment of an otherwise unknown plan depicts part of the same area seen on a surviving piece of the *Forma Urbis* (fr. 32=614). Through this comparison, since the scale of the *Forma Urbis* is known from its depictions of surviving buildings, it can be firmly established that the scale of the Via Anicia plan is exactly the same, 1:240. With this fact certain, Rodríguez-Almeida was able to determine without a doubt that the numerals are figures in Roman feet, regarding the measures of straight line segments of the frontage facing the Tiber.⁹³ The Via Anicia plan therefore

90 Rodríguez-Almeida, (1988), p. 122.

91 Temples with a main entrance on the long axis were rare in Rome; the design was an archaic one (Vitruvius 4.8.4). Only three examples are known, the other two being the temple of Concord in the Roman Forum, and the temple of Vediovis on the Capitoline.

92 Vitruvius 4.8.4.

93 This has been shown by Rodríguez-Almeida, (1988), p. 122. His conclusion is clear and certain, and there is no need for the caution expressed by Nicolet (1991), p. 159, regarding these numerals, which he calls “a series of numbers that indicate the width of property (in feet), or other information of this order”

presents all the features seen in the previously-discussed plans: annotation of ownership, measurements in Roman feet, a distinction of meaning between double (outline) and single (edge) lines, and the use of the 'V' staircase symbol.

The Via Anicia plan displays enough information to allow some investigation of its purpose. Rodríguez-Almeida has pointed out that the frontages indicated are measurements *recto riga* (in straight lines) along the banks of the Tiber, and that together with the private ownership identifications, this information would naturally be of interest to the *Cura Alvei*, an administrative post concerned with the obligations of riverfront landowners to the safe upkeep of the banks in front of their property.⁹⁴ Regardless of its specific application, which cannot be determined with certainty, the Via Anicia plan provides the clearest extant image of the standards of Roman *mensores aedificiorum*, and offers a glimpse of the exact appearance of official cadastral documents.⁹⁵

The Perugia Plan

The 1:240 scale of the Via Anicia Plan and the *Forma Urbis* is seen again in the Perugia Plan (Fig. 1.29). This plan is engraved into a marble slab of unknown provenance, but datable to the first century A.D.⁹⁶ Three buildings are represented at different scales, annotated by many numerals indicating measurements in Roman feet. Carettoni has noted that one of the buildings is certainly a tomb, while the others are two floors of what is thought to be an *aedificium custodiae*.⁹⁷ The outline convention again defines the walls, and open 'Vs' appear for staircases. A short flight of steps is indicated with a series of parallel lines across a hallway. The single line as roof edge appears once more, indicating a portico that was covered over by part of the upper floor of the

(italics mine). Similar caution is expressed by other authors about the numbers that appear on this and other Roman plans. This review should establish firmly that the standard convention was that these numbers always indicated property measurements in Roman feet.

94 Rodríguez-Almeida, (1988), p. 124.

95 As Coarelli (1991) has also asserted.

96 Today kept in the Museo di Perugia; see *PM*, p. 208 and pl. Q, fig. 50.

97 Following the opinion of Hülsen (1890), p. 54, n. 1.

aedificium custodiae. The single line is also used to mark doorway thresholds, and for a few other features which are more difficult to read. The single lines are best interpreted as delimiting the edges of ground surfaces at different levels.⁹⁸ Although Carettoni felt that this plan “for comparison with the [Severan] Plan...does not offer particular interest,” the Perugia Plan’s use of the architectural symbols that we have seen in the other plans is significant, supporting the argument that there was a very well-defined and consistent tradition of utilitarian architectural planning.

As Carettoni observed, the inscription carried by the Perugia slab names Claudia Peloris, “freedwoman of Octavia, daughter of Claudius,” and her husband Claudius Eutyclus, “freedman of the emperor and *procurator augustorum*”; these two were responsible for the construction of the tomb and the related custodian’s building for the benefit of their sisters and their freed slaves. The slab attests the dutiful and generous familial efforts of the wealthy imperial freedman and his wife.

The Urbino Plan

The penultimate example is one which strays from some of the consistent conventions we have seen, probably because its application was less formal than the others. The Urbino Plan (Fig. 1.30), engraved on a marble slab, was found in the cemetery of S. Elena along the Via Labicana and is now kept in the Museo di Urbino (the Ducal Palace). The preserved part of this measures approximately 2 ft. 11 in. x 2 ft. 10 1/2 in. (89 cm x 88 cm). This plan shows a private estate that includes gardens and a structure thought to be a tomb. Two sides of the property are annotated with measurements, reed-beds are labeled (HARVNDINETVM), and a public road (VIA PVblica) is distinguished from a private road (VIA PRIVATA). A ditch (FOSSA) is also marked with inscription. The reed-bed enclosures are filled with a regular pattern of dots,

⁹⁸ This assertion is based on the “edge line” interpretation known from the use of the single line for roof boundaries. The issue of line meanings in these plans and especially in the *Forma Urbis* will be examined and fully clarified below in Chapter 2, “Lines.”

the meaning of which has occasioned some speculation. That they cannot represent trees is clear both from their density and from the fact that two of the several enclosures are clearly labeled HARVNDINETVM. It seems most likely that these closely-placed dots do not each represent individual plantings, but are instead a kind of “fill pattern” that indicates a reed-bed, with the inscriptions added in two places to clarify this. The dots appearing outside the enclosed areas would then remain to be interpreted as trees (since the three rows would make columns unlikely), except for the file of dots around the monument, which Carettoni would prefer to read as columns 'that form a portico, analogous to that--with pilasters--which surrounds the tomb of Romulus, son of Maxentius, on the Via Appia Antica.⁹⁹ If the faint line connecting these putative column points is a roof edge line (and not a guide line for the engraver), then this interpretation would find further support. Rooms appear, with doorways, to either side of the central monument, and here it is important to note that the walls are depicted with single lines (“mass lines,” as this study will call them below), rather than the double-line “outlines” that we have seen consistently in the previous examples.

This plan may have served the purpose of publicly displaying the boundaries of a funeral plot, with the important measurements being only those defining the location and perimeter of the property so that it should not be encroached upon. This scenario would explain why no other measurements are present, and why the architecture of the monument is rendered in the simpler but less accurate single-line convention. The distinction between the public road and the private access road is also made especially plain (and emphatic, since “via privata” is repeated); from this feature it would appear that the Urbino Plan may have served the purpose of a “no trespassing” sign, warning pedestrians that even the access road to this monument was not for public use. Such a use would also explain the difficulties with scale in this plan. The two stretches of private road are marked with their measurements, and can thus be checked for scale; however,

⁹⁹ *PM*, p. 208.

this results in the reading of two different scales, about 1:220 and 1:320.¹⁰⁰ Hülsen supposed that the monument and the small rooms around it (possibly for the use of watchmen) were represented in a scale of about 1:100.¹⁰¹ With at least two, and possibly three scales then, this plan could never have been consulted for all its details by an architect, legal authority, or anyone else. However, if the plan were created merely for the purpose of declaring to passersby the boundaries of private tomb monument property, then a schematic representation would be appropriate: key elements such as the monument itself could be emphasized for the sake of recognition, and the drawing itself would not need to be to scale if the measurements listed provided a clear indication of where the access road branched off the public road, and how far that private road ran. Since it is likely that this plan was posted very near the property it represented in order to serve its purpose, the ambiguity that we see in the dots symbolizing perhaps both trees and columns would probably never have existed for anyone seeing the plan in antiquity, since they may have been able to see the actual trees and columns from the spot where they would encounter the plan. In the case of the Urbino Plan, then, we can see architectural mapping conventions employed in a flexible fashion to suit the particular application.

The Bath Mosaic

Finally, a last example to consider is not in marble, nor even engraved, but is instead a polychrome mosaic (Fig. 1.31). This is the Via di Porta S. Lorenzo Mosaic, discovered near the Piazza del Macao during roadwork carried out in 1872. The Bath Mosaic depicts the distinctive and symmetrical architecture of a bath building (hence the name employed here for it). The central portion of this mosaic is lost, but what remains is enough to identify it. The walls are delineated in black outline, their thickness filled in with yellow tesserae. Windows are marked with black lines also. The floors of the rooms are in

¹⁰⁰ *PM*, p. 210.

¹⁰¹ Hülsen (1890), pp. 55ff..

white. Finally, pairs of numbers appear in the rooms, in red. This mosaic is believed to have decorated a room of some small private bath, the plan of which it represented.

Possibly it may have served as a guide map for visitors. The numbers placed in the rooms were the object of rather contrived speculation by the mosaic's discoverers, but it became apparent that the numerals are the measures of the room dimensions in Roman feet.¹⁰²

The numerals refer to dimensions parallel to their base line; the square rooms are given only one dimension.¹⁰³ This interpretation can be checked for consistency in the mosaic, and the scale is revealed to be 1:16, or one *digitus* to one *pes*.¹⁰⁴ The Bath Mosaic is set apart from the other plans we have reviewed, but it is interesting to observe that even in this unusual and informal case some of the familiar conventions are present, including the measurements in feet and the use of the outline to trace the limits of the walls.

Conclusions regarding urban survey plans other than the *Forma Urbis*

These are all of the known Roman architectural plans, besides the *Forma Urbis*.

When studied all together as in this review, some clear conclusions emerge that support understanding of the tradition of the *mensores aedificiorum*. First, all these plans include annotation of specific ownership or measurement or both. All are examples of careful draftsmanship, with crisp angles and straight lines. Despite their various provenances and dates, they all employ the same approach to graphic presentation and the same body of conventions, among them the staircase symbol and the distinction between single edge lines and "double" outlines (except in the simplified case of the Urbino plan, for which graphic accuracy was not as important). Scale varied, but a ratio of exactly or

102 C. L. Visconti and R. Lanciani (1872-73), p. 12, pl. 1, pp. 243, 287, promulgated the extraordinary hypothesis that the numbers referred to units of the praetorian and urban cohorts who were entitled to the use of various rooms. Jones (1926), p. 270, did not accept the military unit hypothesis, but suggested that "the numerals refer to the uses of the rooms inasmuch as their shapes and sizes vary." The correct interpretation was noted by P. Rosa (1873), p. 46; and by Jordan (1874), pp. 11, 65, pl. XXXIV.

103 Carettoni in *PM*, p. 209, n. 60.

104 A similar simple relationship based on standard Roman measuring units is present in the 1:240 standard scale, it being one foot to one *actus duplex*, or doubled unit of 120 feet. The *actus* originated in agriculture as the length of furrow plowed before an ox was turned, and as a standard unit later figured into most centuriation schemes.

approximately 1:240 appears most often (in a probable five out of the seven examples), and this seems the likeliest ratio for the plans whose scale is not known. All these consistencies show that the tradition of the *mensores aedificiorum* was one with clear conventions employed not only for professional and official maps but in certain circumstances in private contexts as well.

Another interesting consistency in these plans is the general absence of boundary lines. All the lines marked on these plans apparently correspond to some actual physical feature of the surveyed landscape, and more specifically to man-made physical features. Even the boundary of the property with which the Urbino Plan is concerned is indicated by a roadway, rather than a specified property line. In view of Roman field survey's focus on boundaries, to the point of the exclusion of architecture and physical features, this contrasting architectural focus, that excludes boundaries is quite striking. The Orange cadasters, for example, show the Rhone prominently emphasized with wavy lines indicating the water surface, since a river is such a significant boundary feature (Fig. 1.24); the Via Anicia Plan, on the other hand, (like the *Forma Urbis*) uses no mark at all to indicate the Tiber, whose course is only apparent from the lack of architecture within it.¹⁰⁵ We must conclude from the evidence now available that the *mensores aedificiorum* were true to their names, and that non-architectural boundaries were not normally the concern of these surveyors.

This exclusive literal practice of just what the profession's name suggests extends to other natural features as well. Trees and planted areas are indicated in the Urbino Plan (and in the *Forma Urbis*), but *only* where placed or confined by human hands in architectural settings. In the larger horti we find only empty space rather than any indication of the vegetation that must have existed there. Temporarily setting aside the

¹⁰⁵ Although the city of Rome was divided into fourteen wards (*regiones*), and further into neighborhoods (*vici*) for administrative, fire prevention, and security purposes, there appear no indications of any such boundaries on the architecturally-focused Marble Plan (see discussion of this matter below, Chapter 2, "Lines").

psychological implications of this practice, we can see in this selectivity another characteristic aspect of the urban survey tradition.

Considering all its specialized symbols and its methods of using lines in specific ways to represent dimensional architecture and urban features, it is not surprising that the urban survey tradition was separate from that of the *agrimensores*. But in the differences just mentioned, we see that more than mere landscape and notation distinguished the two parallel survey disciplines; there were basic differences in the conceptual approach to the work. One discipline operated by generating theoretical boundaries that were then transcribed into the earth by marks such as *cippi* (boundary stones), roads, walls, and hedges; the *agrimensores*' paradigm was theory-based, and the products of their work resembled the illustrations of a geometry textbook in reducing the world they encountered to nothing more than the boundary elements and defined areas that were significant for their concerns. The *agrimensores* started with theory and produced results that affected the physical world.

Conversely, the *mensores aedificiorum* derived their products from the empirical observation of the real world, creating plans that were theoretical distillations of that reality. The *mensores aedificiorum* started with the physical world and produced schematic documents employing a symbolic language of line and graphic conventions. These documents would take measurements from the ground and apply (or 'transcribe') them in the world of law and behavior. As different as the approaches of the two survey disciplines were, they shared the same practice of rigid restriction of view. For the *agrimensores*, buildings were irrelevant unless a boundary was defined by one, and even then only the boundary itself would figure into the document produced. For the *mensores aedificiorum*, a theoretical boundary was invisible, intangible, and of no concern unless it was marked and defined by a physical construction, and even then it would be the

construction and not the boundary, no matter how important, that would appear in the document produced.¹⁰⁶

Another similarity to recognize between the two disciplines is the careful and precise execution of the work. The vast tracts of accurate grid lines laid out in centuriation patterns attest to the disciplined effort of the field surveyors; from the careful delineation seen in the stone copies of urban survey plans, we can presume that the surveys on which they were based were carried out with care as well: it is clear that the plans were meant to give the impression of precise and deliberate work.

It is also clear from the preceding examples that even when designed to be visually attractive, like the polychrome Bath Mosaic, these plans were intended to be useful, and while we cannot know the exact ways in which some of them were employed, we can nonetheless observe that they *were* furnished with data necessary to make them useful, symbols clear enough to read without great ambiguity, and a level of care in execution that would make them graphically dependable. Even if some of these marble plans were posted for symbolic or decorative reasons, they faithfully represented the accurate survey plans upon which they were based, and therefore could have been useful even in contexts as “showpieces” transcribed into marble.

The *Forma Urbis* in light of the Urban Survey Tradition

Now that we have reviewed the evidence of the two Roman survey traditions, it is time to consider the Marble Plan in light of them. The character of field survey thoroughly distinguishes it from the work seen in the Plan; having reviewed some of the pertinent facts we can be sure that the Plan was not produced in this tradition. And having looked at all the known Roman architectural plans, we find that there are both significant connections and significant differences between them and the *Forma Urbis*. That the Plan was a product of the urban survey tradition is obvious, both by its general nature (a plan

¹⁰⁶ This observation will be put to use below in the consideration of the "Purpose of the Plan," Chapter 2.

of architecture) and by specific details, such as the use of symbols like the V staircase, along with parallel lines for other flights of steps; the exclusive focus on architecture and the absence of boundaries or natural features; the scale of 1:240, which seems to have been a standard scale for urban plans; the use of edge lines for the indication of rooflines over porticoes; the omission of doors in doorways; and the similarity of the graphic approach that uses lines and dots for its delineation rather than any “rendered” features such as irregular tree crowns or branches, or wavy lines for water surface or terrain relief.

But while these important similarities firmly mark the *Forma Urbis* as closely related to the urban survey tradition, there are also important differences that distinguish it from the consistent practices seen in the other plans. These will be taken up in the next chapter after we have had a thorough look at the Plan itself.

The Plan as evidence of survey and map-making techniques

By its size and extent, the *Forma Urbis* can (far more than the other fragmentary plans) be a window into urban survey techniques, limitations, and abilities. The Marble Plan provides a large enough sample of survey work that we can analyze its level of accuracy and investigate the methods used to produce it. These issues have been studied by the modern scholars of the Plan with important results.

Gatti performed the first technical analysis to determine the accuracy of the overall city survey seen in the Plan.¹⁰⁷ This analysis was not possible until the original design and scope of the Plan were clear from a secure understanding of the arrangement of the marble slabs on the wall of the *aula* in the Templum Pacis. Cozza provided this understanding in his thorough study of the wall, which preserved traces of the metal clamps that had once held the slabs.¹⁰⁸ These clamps correspond to holes in the back of many of the slabs, and positive matches are possible. Cozza even physically replaced certain of the larger fragments on the wall where they once stood to confirm his interpretation. The fragments

¹⁰⁷ *PM*, pp. 225-233.

¹⁰⁸ *PM*, pp. 177-195.

with identifiable topography could then be placed into the scheme and checked against the clamp traces for certainty (see Fig. 1.32).

Gatti used this information about the fragments' original disposition relative to each other to check distances between several reference points that were known both on the Plan and in the modern city through the survival of the ruins. While the scale for individual buildings on the Plan had been established to be 1:240, he discovered that the scale for longer distances varied between 1:240 and 1:250, with an average of about 1:245.¹⁰⁹ Using this figure he found a maximum error over long distances (nearly 1 1/2 miles, or 2.5 km) to be about 1%. He then compared reference points on the Plan to the same points as determined by the twentieth-century urban survey of Rome. His figure shows minute discrepancies between the two surveys (Fig. 1.33). Gatti marveled at the degree of accuracy and overall survey control that this attests, especially considering the hilly terrain of the city, its irregular architecture, and the primitive survey instruments available.

Rodríguez-Almeida agreed that this overall high level of accuracy was indeed impressive, but nonetheless found certain survey errors egregious, the worst being the orientation of the platform of the Temple of Divine Claudius, which on the Plan is skewed twenty-one degrees from its archaeologically known alignment. Rodríguez-Almeida devoted further analysis to the alignment errors found in the plan, showing that they were greater in the hilly areas around the Temple of Divine Claudius. Between the area of the Roman Forum and the Campus Martius, errors were five or six degrees of misalignment, more typical for the Plan in general. In the level terrain of the Campus Martius were the most accurately surveyed alignments, with degrees of discrepancy ranging from four to zero. Rodríguez-Almeida points out that the high accuracy in the Campus Martius survey was no doubt facilitated by the fact that most of the major buildings in the area are on the same orthogonal grid of alignment. These misalignment errors are another index of the

¹⁰⁹ Gatti (*PM*) felt that this was very possibly intentional, to compress the overall Plan slightly, in order to fit it into the space available on the wall.

degree of accuracy of the Plan, and by inference the accuracy of Roman urban survey in a challenging environment.¹¹⁰

Rodríguez-Almeida went further to explain certain of the more significant errors, attributing most of them to the manner in which the Plan survey was carried out.¹¹¹ He argues that the city was surveyed in sectors oriented on high reference points, and probably all related back to the central high point of the Capitoline. While the accuracy within any one sector would be fairly high, problems would arise when the separately-surveyed sectors had to be reconciled into the entire Plan. In most cases, slight offsets would accommodate the small variances in each survey, but where several sectors came together in rugged terrain, as perhaps in the area of the Temple of Divine Claudius and the Colosseum, the errors resulting from reconciliation might be compounded. Rodríguez-Almeida points out that his hypothesized manner of survey by sectors would also account for the global differences existing between the misalignments of the Campus Martius area and those of the Roman Forum area. Through this analysis, the Plan has therefore allowed investigation of the operational method of Roman urban survey.

While the series of small fragmentary plans provides information on the specific conventions and purposes of urban survey, it is the *Forma Urbis* alone that allows us to investigate and assess the practices and limitations of the *mensores aedificiorum*. In lieu of any ancient literary works on urban survey, then, the Plan serves as a testament of the tradition and as an index of its abilities.

Date of the Plan

The date of the Plan's creation has received careful investigation, and can be determined to within a span of eight years through correlation with historical information

110 Rodríguez-Almeida, *FUM*, pp. 44-53.

111 Rodríguez-Almeida's conclusions: *ibid.* He offers the reminder (*FUM*, p. 46) that the survey instruments such as the dioptra mentioned by Vitruvius (for taking both horizontal and vertical angles) were without lenses and were handmade with resulting irregularities. Vitruvius and the Roman surveyors were aware of the inexactitude of their technology, but from their work we may see that they strove for the greatest possible accuracy permitted by such limitations.

known from literary accounts. Carettoni has provided the most thorough treatment of the matter.¹¹² As he observed, efforts to date the Plan must rely mainly on data intrinsic to the Plan itself, since there is no direct mention of it in the historical literature. The wall on which it was specially mounted (and on which it was carved) has been shown by Cozza to be Severan, but this only proves that the Plan cannot have antedated the wall construction.¹¹³ Where two contiguous slabs meet, there is occasionally some “smoothing” of the surfaces to reduce a discrepancy in slab thickness; this would only have been done after the mounting of the slabs. The engraving in these areas invariably overlies this smoothing, indicating that the engraving was carried out after the slabs were mounted. The paleography of the inscriptions suggests a Severan date, but cannot be more specific than that. Principal date bracketing comes from two features appearing on the Plan: a building and an inscription. The first of these is the Septizodium, which is illustrated (and labeled--see Fig. 1.34).¹¹⁴ This monumental display façade, similar to the ornamental backdrop *scaenae frons* of a Roman theater, stood at the point where the Via Appia reaches the foot of the southeastern corner of the Palatine Hill. The structure is known from sixteenth-century drawings made before the surviving portion was dismantled by Pope Sixtus V in 1588-89, so it would be securely identifiable even if it were not labeled by an inscription (Fig. 1.35).¹¹⁵ This structure is known to have been constructed on the order of Severus in A.D. 203, and its appearance on the Plan therefore provides a *terminus post quem*.¹¹⁶

The second bracketing date is provided by one of the inscriptions on the plan, in which a building yet unnamed is designated by SEVERI ET AN/TONINI AUgG/NN,¹¹⁷ “(being constructed) in the name of the emperors Severus and Antoninus (Caracalla).” (Fig.

112 *PM*, p. 213-216

113 The wall is a Severan restoration after the *Templum Pacis* was destroyed in the great fire of Commodus in 192 B.C. See Cozza's discussion of the archaeological investigation of the remains in *PM*, pp. 177-195.

114 fr. 8 a-b (*FUM*, pl. V)

115 Richardson (1992), p. 350.

116 SHA, *Sept. Sev.* 19.5, 24.3-4, *Geta* 7.2; *CIL* 6.1032=31229; Jerome *Ab Abr.* 2216.

117 Fr. 42b-d, e (*FUM*, pl. XXXIV)

1.36)¹¹⁸ This reference to the joint emperorship tells us that, at the time of the inscription, Severus was still alive, and so this provides a *terminus ante quem* of 4 February 211, when it is recorded that Severus died on a military campaign in Britain.¹¹⁹ The span of years from A.D. 203 to 211 was also identified early by Jordan (on the same grounds) as the time within which the Plan must have been made.¹²⁰ Carettoni notes that no building or inscription appearing on the Plan can be identified as dating later than the 211 bracketing date.¹²¹ He argues that no part of the Plan could be from an earlier date, since the Severan rebuilding of the wall on which the Plan was mounted was occasioned by the great fire of the reign of Commodus, which destroyed the *Templum Pacis* in 192.¹²² Slabs from any putative earlier plan would have been too damaged for re-use, judging from the degree of destruction indicated by the rebuilding.¹²³ Finally, Carettoni acknowledges that styles or “hands” of several different artists may be distinguished in the engraving of the Plan, but explains that this is not an argument for multiple episodes of creation. It is rather a predictable consequence of the magnitude of the work, which as we have seen covered about 281 sq. yds., or 235 m². The conclusion remains that no part of the Plan is earlier than A.D. 203 or later than 211. Carettoni has attempted to narrow the date range further by linking the creation of the Plan with Lucius Fabius Cilo, the first urban prefect after the redefinition of the office by Severus.¹²⁴ The argument is tenuous and has not found general acceptance among other topographers.¹²⁵ For present purposes

118 Dilke (1985), pp. 104, 209 n. 11. Severus had granted his son Caracalla the full rank and title of Caesar and adopted him into the family of the Antonines in 196.

119 The ancient historical sources for Severus are Herodian 2.11-3. fin.; Cassius Dio 73-6; and the SHA, *Severus*.

120 Jordan (1874), section 7.

121 Carettoni (*PM*), p. 213, points out for example that the Plan shows *tabernae* southeast of the *Templum Pacis*, in an area that would later be occupied by the Basilica of Constantine.

122 Galen, *de comp. med.* 1.1.

123 *PM*, p. 214.

124 *PM*, p. 215-16. Carettoni interprets a letter of Severus as suggesting that the office was reorganized between A.D. 205-208, and restores a partial inscription on the Plan known only from a Renaissance drawing (“-ILONIS,” fr. 3A) to *DOMUS CILONIS*, the house of Cilo, to make the connection.

125 Bloch (1961), p.145, for example, firmly refutes Carettoni’s contention that another partial inscription referred to Cilo’s wife. Harvey (1980), p. 128; Anderson (1984), p. 116; and Richardson (1992), p. xix, all disregard Carettoni’s narrower date range.

the range of eight years offered by the certain brackets is not so great as to cause inconvenience.

Templum Pacis: the setting of the Plan

The Plan covered the wall of an *aula* (Fig. 1.37), or side hall, of the Templum Pacis (the "Sacred Precinct of Peace").¹²⁶ This complex, as mentioned above, was built by the Flavian emperor Vespasian, in part to celebrate the peace he had brought to the empire at the end of the so-called Jewish War prosecuted by Rome in Judea. Vespasian's victories also marked the end of civil wars that had convulsed the capital following the death of the emperor Nero in A.D. 68. Vespasian's accession founded the Flavian dynasty and brought peace and security not only to the capital, but to the far corners of the empire as well. The emperor and his son Titus celebrated a double triumph in A.D. 71 for the Jewish War (depicted and celebrated in the famous reliefs on the Arch of Titus).¹²⁷ In a solemn related ceremony the doors of the temple of Janus Geminus were closed, an ancient custom to mark the rare occasion of complete peace at Rome. It was probably in recognition of all this, rather than of the conclusion of the Jewish War alone, that Vespasian vowed the Templum Pacis in A.D. 71.¹²⁸

Construction probably began immediately, and the structure was dedicated in A.D. 75.¹²⁹ The space for the Templum had been cleared by the famous fire in A. D. 64; the city's central *macellum* (food market) had stood on the site prior to the conflagration.¹³⁰ Nero had already built a new market, the Macellum Magnum, on the Caelian Hill in A.D. 59.¹³¹ The space left by the former macellum was more square than rectangular, and this

126A *templum* was a sanctified precinct, which might or might not include an *aedes*, an actual temple.

127 Josephus, *BJ* 7.158.

128 Suetonius, *Vesp.* 9.1; Josephus, *BJ* 7.158.

129 Cassius Dio 65.15.1; Aurelius Victor *Caes.* 9.7; *Epit.* 9.8.

130 See Tacitus, *Ann.* 15.38-44 for the best account of the fire. Tacitus includes a list of some of the buildings destroyed which shows that the destruction reached as far as the Velian Hill on which the Macellum stood. The location of the Templum Pacis and the area's historical topography are treated by Anderson (1984), pp. 101-118.

131 *Notitia*, Region II; *CIL* VI, 1648, 9183; Cassius Dio 62.18. For the Macellum Magnum, see J.S. Rainbird and S.B. Sears (1971).

may have influenced the design of the *Templum Pacis*.¹³² The form of the *Templum Pacis*, as had been discussed above (Fig. 1.15), is known substantially through the assistance of Marble Plan fragments.¹³³

Though often called by modern authors the "Forum Pacis," and regarded as one of the series of great imperial fora, it does not conform to the pattern seen in other imperial fora, such as those of Caesar, Augustus, and Domitian, which present a rectangular space dominated by a temple on a high podium at one end (Fig. 1.2). The Forum of Trajan also follows this 'standard' plan, though the temple was screened from the open area of the forum by the bulk of the *Basilica Ulpia*. The *Templum Pacis*, as Anderson has pointed out, was different from the imperial fora in rationale as well as in title.¹³⁴ Indeed, although it was built in orthogonal alignment with the other fora existing at the time of its construction, it was separated from them by the commercial alley of the *Argiletum* which led from the *Forum Romanum* into the crowded *Subura* region.¹³⁵ Domitian, the last of the Flavian emperors, monumentalized this passage and turned it into his own imperial forum, called variously the Forum of Nerva (after Domitian's successor, who dedicated the work), the Forum of Minerva (after the temple at one end), or *Forum Transitorium* (after its use as a passageway). This construction involved a modification of the *Templum Pacis*, replacing one of its porticoes with a wall just behind its column line and incorporating the space of the former portico into the *Forum Transitorium* in order to make it wider (Fig. 1.38).¹³⁶ The result of Domitian's building activity was the physical linkage of the *Templum Pacis* to the sequence of the Imperial Fora, from which it had originally stood distinct. This situation has fostered misinterpretation of the *Templum*

132 Anderson (1984), p. 103.

133 See above, p. 16.

134 The alternative designation of the structure as the "Forum Pacis" does not occur in literature until late antiquity.

135 Cf. Martial's reference to a bookshop amongst the stalls in the *Argiletum* (1.117.10-12).

136 A topographical puzzle solved by Anderson (1982b).

Pacis as one of the imperial fora, whereas it is more properly considered in the genre of grand Roman *porticus*.¹³⁷

The public porticus was a Roman building type established in the early second century B.C., deriving probably from the Roman contact with Greek architecture and the stoa form in Sicily during the Second Punic War.¹³⁸ Roman porticus were originally built for utilitarian purposes, but by the later first century B.C. they had developed into magnificent complexes meant for public strolling and enjoyment. Prominent examples include the porticus of Pompey and of Octavia, and the Saepta Julia. The large public porticus were enclosures bounded by colonnades on three or four sides, typically landscaped with trees or plantings, and furnished with lavish displays of fine artwork for public viewing.¹³⁹ Scholae and libraries might be included as well in such a refined milieu, as for example in the Porticus of Octavia.¹⁴⁰ A porticus might or might not include a temple within its space.

In all these respects the Templum Pacis is clearly a porticus of typical form. The original form of the Templum Pacis was a symmetrical four-sided (nearly square) colonnade, with pairs of exedrae (side rooms) opening off the northwest and southeast sides of the colonnade (Fig. 1.39).¹⁴¹ The Aedes Pacis, the actual temple to Peace, was incorporated into the colonnade at one end, and while the six columns screening the apsed cella of this temple were probably taller than those of the rest of the porticus, the temple was not otherwise separated from the fabric of the porticus, like the temples of the

137 As has been reasoned by Anderson (1984), p. 111. *Porticus* (s. and pl.) is not translated here because it could have a variety of meanings from a colonnade to a complete four-sided complex, which is not fully conveyed by the English "portico."

138 The stoa was a long room or series of rooms opening onto a continuously colonnaded and roofed front that formed a covered walkway.

139 On landscaping, cf. Pliny, *NH* 14.11 on the single vine stock that covered all the walks in the open area of the Porticus Liviae, or Martial 1.108.1-4, who comments on the plantations of laurels in the Porticus Vipsania.

140 This was the Bibliotheca Porticus Octaviae. (Plutarch, *Marc.* 30.6)

141 Part of one of these exedrae is preserved in the foundations of the Torre dei Conti. Coarelli (1974), p. 103, identifies the opus quadratum seen in this construction as part of the original building of Vespasian. Such exedrae are seen in the plans of the other grand porticoes in Rome. Cf., for example, Hanson (1959) ch. 3, on Roman theater-temples, Richardson (1976) on the Porticus Octaviae, and Richardson (1977) on the Porticus Philippi.

Imperial Fora. Cryptic symbols appear on the Marble Plan's representation of the courtyard plaza of the *Templum Pacis*; while their exact interpretation is not certain, they are either botanical features or decorative pools, again distinguishing the *Templum* from the imperial fora and linking it to the grand porticus.¹⁴² The *Templum Pacis* was famously equipped with beautiful artworks (mentioned by Pliny, Pausanias, and Procopius among others),¹⁴³ including not only the spoils of the Jewish War (such as the golden menorah and sacred vessels from the Temple at Jerusalem)¹⁴⁴ but art treasures gathered from the destruction of Nero's luxurious palace known as the *Domus Aurea*,¹⁴⁵ and elsewhere. These works would have been displayed in the shelter of the porticoes for the enjoyment of the public. The magnificence of the *Templum Pacis* is attested by admiring writers through the end of the fourth century A.D.¹⁴⁶

Libraries are known from literary sources to have existed in the *Templum Pacis*.¹⁴⁷ It is presumed from what is known of the plan of the precinct that the large rooms flanking the temple cella were in fact these libraries.¹⁴⁸ An adjoining room is known on the south side of one of these putative libraries; by symmetry a complementary room is restored for the north as well. The libraries were certainly somewhere within these four rooms (or *aulae*). The southernmost room of the series of four under discussion is now incorporated into the Church of SS. Cosma and Damiano, and its walls contained niches which could

142 Lloyd (1982) discusses monumental gardens on the Marble Plan, including those of the *Templum Pacis*.

143 See Anderson (1984), p. 106 for a list of the art works in the *Templum Pacis* attested by ancient authors.

144 Josephus, *BJ* 7.161. The relief in the Arch of Titus representing the triumphal procession of A.D. 71 depicts this heavy menorah in the hands of the conquerors.

145 Pliny, *NH* 34.84.

146 SHA, *Tyr. Trig.* 31.10; Ammianus Marcellinus 16.10.14; Symmachus *Rel.* 3.7.

147 Galen, *de comp. med.* 1.1 laments the destruction of his own works in the *Bibliotheca Pacis* in the fire of A.D. 192. Gellius cites two other works from the library of the *Templum Pacis*, the *Epistulae* of Sinius Capito, and the *Commentarium de proloquiis* of L. Aelius Stilo (5.21.9 and 16.8.2).

148 The presumption of twin or symmetrically laid-out library rooms is based on other examples of libraries at Rome which were designed in this fashion, with complementary Greek and Latin sections. Two examples are the Library of Palatine Apollo, set up by Augustus in coordination with his Temple of Palatine Apollo (Tacitus, *Ann.* 2.37 and 83; Suetonius, *Gramm.* 20, see also Thompson [1981]) and the *Atrium Libertatis* (Hall of Liberty) as restored by Asinius Pollio (Suetonius, *Aug.* 29.5), which was later rebuilt as the twin apses of the Ulpian Library in Trajan's Forum.

have held book-racks.¹⁴⁹ We should therefore imagine the Plan dominating a room that was itself a library, or adjacent to one which was part of a complementary pair or series.

Roman libraries could, not uncommonly, serve as archives as well. The records of the Roman censors, for example, were kept in the *Atrium Libertatis* (Hall of Liberty), later rebuilt as the Ulpian Library in the Basilica Ulpia of Trajan's Forum.¹⁵⁰ The Library of Hadrian at Athens served as the archive for the administration of the Roman province of Achaëa, and Hadrian's Library at Alexandria, known from papyri, housed administrative records as well.¹⁵¹ The Library of Hadrian at Athens is a particularly interesting comparative example, because it reproduces the form of the *Templum Pacis* almost exactly.¹⁵² This has encouraged the conclusion that the *Templum Pacis* also contained official archives, in particular those of the urban prefect, who, it is believed, would have overseen the cadastral maps of Rome. The *Templum Pacis* has been suggested as a probable site for an office of the urban prefecture in the later empire.¹⁵³ The Marble Plan probably dominated a room devoted in part to the storage of the urban prefect's official maps of the city. Its relationship to those maps and its purpose in that room will be taken up at the conclusion of Chapter 2.

Cozza has exhaustively studied the original situation of the Plan.¹⁵⁴ His close study of the wall on which the Plan was mounted has revealed the number and arrangement of the marble plates that formed the complete Plan, as noted above (Fig. 1.32). It is the grid provided by Cozza's work which has allowed the studies of Roman survey accuracy and the placement of many non-contiguous fragments in their correct original relationship to

149 Coarelli (1974), pp. 133-4; Anderson (1984), p. 116.

150 On the *Atrium Libertatis*, which contained various legal records engraved on bronze: Livy 43.16.13, 45.15.5; Granius Licinianus 28.36.

151 On the Library of Hadrian at Athens, see Sisson (1929). The creation of Hadrian's Library at Alexandria is recorded in a preserved papyrus from the prefect of Egypt T. Flavius Titianus, dated A.D. 127. (*P. Oxy.* 34, cited in Coarelli (1991), p. 80). Copies of two documents deposited in this library, regarding real estate transactions, are preserved: *P. Oxy.* III 237 and XII 1473 (also cited in Coarelli [1991], p. 80, n. 45).

152 Colini (1937) commented on the striking similarity of the two buildings.

153 Coarelli (1986) presents the argument for locating an office of the urban prefect in the *Templum Pacis*, and develops the reasoning further, arguing for the location of official cadastral maps there, in Coarelli (1991).

154 *PM*, pp. 177-195

each other. The only remaining uncertainties concern the borders of the Plan, which at the bottom and sides are known only within a range of approximately 4 in. to 12 in. (10 cm to 30 cm) due to lack of preservation of edge fragments. This minor ambiguity, however, does not present any complication to the study of the Plan.

The Templum Pacis was one of the premiere showplaces of Rome, displaying some of the city's finest art possessions in a serene and refined setting, housing libraries and, it appears likely, city records as well. An understanding of the nature of the Templum Pacis as a grand porticus will contribute to the determination of the purpose of the Marble Plan when this subject is considered below.

Predecessors of the Plan

The fire of A.D. 192 destroyed Vespasian's Templum Pacis, which was then rebuilt by Severus, as has been noted.¹⁵⁵ This historical fact has led many to conclude that the Plan itself is also a restoration of a Vespasianic original.¹⁵⁶ The Plan we possess entirely escaped literary mention; it is possible that an earlier marble plan of the city did also. However, all evidence for such a putative predecessor to the Severan Plan is inconclusive. While the variety of evidence may appear reasonably convincing *en masse*, when examined point-by-point the case becomes weak.

The evidence most commonly cited in arguments for a Vespasianic Marble Plan is a passage from the elder Pliny's *Natural History* (3.66). However, this passage has been misinterpreted, since the different genres of Roman urban and land assessment have not been clarified previous to the present study. The passage from Pliny refers to statistics regarding the city of Rome, as determined during the Flavian censorship of A.D. 73.¹⁵⁷ A

¹⁵⁵ Above, p. 47.

¹⁵⁶ E.g., Castagnoli (1948), p. 285, n. 1; Dudley (1967), p. 131; Palmer (1980), pp. 217-34; and Nicolet (1991), p. 158 all regard a Vespasianic Marble Plan predecessor as a certainty. Expressing more caution are Harvey (1980), p. 128; Anderson (1984), p. 117; and Richardson (1992), p. xix.

¹⁵⁷ Vespasian and his two sons Titus and Domitian constituted the Flavian dynasty. Vespasian and Titus shared the duties of the censorship of A.D. 73, hence the use of the term "Flavian" in this argument, to cover actions possibly attributable either to Vespasian or Titus.

Roman censorship involved several kinds of census and ‘stock-taking’ by the Roman state, including citizen counts and, as Pliny’s passage attests, measurements of the city. Pliny records figures for the circumference of the city within the walls and the number of its regions (wards), hills, neighborhood shrines, and gates, as well as several mileage figures for distances computed within the city.¹⁵⁸ All of these figures are perfectly consistent with the kinds of statistics preserved in the Regionary Catalogues of the fourth century, but they do not imply a house-by-house, room-by-room graphic survey of the city.¹⁵⁹ The kind of measurements taken by the Flavian census belong to a statistical record-keeping tradition distinct from the intensive graphic architectural recording of the *mensores aedificiorum* as seen in the Severan Marble Plan. The mileage figures indeed attest to some degree of map-making of the city, but the measurement of mileage along major roads is a far less intensive and difficult proposition than the total architectural recording of the city. The passage from Pliny provides conclusive evidence that the verbal/statistical assessment of the city dates back far earlier than the Regionary Catalogues, and this will be useful when the nature and purpose of those documents is examined in Chapter 4.¹⁶⁰ But the passage in no way stands as evidence that a Flavian Marble Plan comparable to the Severan monument was created. Indeed, the very fact that Pliny omits to mention any such monument while on the subject of Rome’s topography could be considered some evidence (although merely negative) *against* the idea that there was a Flavian Marble Plan.

Vespasian is known to have ordered the creation of at least one large wall map recording new survey information, the Cadasters of Orange, of which the best preserved

158 “*Moenia eius collegere ambitu imperatoribus censoribusque Vespasianis anno conditae DCCCXXVI m. p. XIII-CC, complexa montes septem. Ipsa dividitur in regiones quattuordecim, compites Larum CCLV. Eiusdem spatium mensura corrente a miliario in capite Romani fori statuto ad singulas portas, quae sunt hodie numero XXXVII ita ut Duodecim semel numerentur praerentur praetereanturque ex veteribus VII quae esse desierunt, efficit passuum per directum XX.M.DCCLXV.*” (Pliny, NH, 3.66).

159 The Regionary Catalogues will be examined in depth in Chapter 4.

160 At that time the separate tradition of numerical/verbal assessment, as opposed to the graphic forms of land and architectural assessment, will be discussed.

(Cadaster B) was about 18 ft. long and 23 ft. long.¹⁶¹ It might seem reasonable to suggest that since this emperor appears to have favored the idea of a monumental marble map, a *Forma Urbis Romae* would not have been out of place in his reign. But the Cadasters of Orange, a unique instance of a large provincial wall map carrying field survey information and tax requirement records, are hardly strong evidence for the creation of an urban architectural survey map of the imperial capital which carried no annotation of private property or tax obligations.

Archaeological evidence has been brought to the argument for a Flavian marble plan as well, but here also the case is far from conclusive. Several fragments of the Plan itself have been claimed as remnants not of the Severan Plan, but of the putative Flavian plan, primarily due to their provenience outside the precincts of the *Templum Pacis*. The fragment of most lasting contention has been fr. 18a, depicting part of the Temple of Castor in the Roman Forum. Differences in details of the graphic treatment of the two sides of the temple, on separate and non-contiguous fragments, together with the fragment's provenience in the Roman Forum, have been claimed as evidence that it did not belong to the Severan Plan.¹⁶² However, a number of fragments of uncontested Severan attribution have been found some distance from the Room of the Plan in the *Templum Pacis*; the activities of scavengers over many centuries scattered Plan fragments without destroying all of them, and therefore the provenience of fr. 18a, not very far from the *Templum Pacis*, is not evidence that it is part of a Flavian Plan.¹⁶³

The graphic differences between the depictions of the two sides of the Temple of Castor are more suggestive, but not conclusive since the engravers of the Plan made so

161 Harvey (1980), p. 126.

162 Most strongly in Steinby (1989), who also argues that fr. 38, depicting part of the Baths of Agrippa, belongs to a Vespasianic plan. Her argument is seconded by Coarelli (1991).

163 Steinby's case (1989) for both fr. 18a and 38 is refuted point-by-point on these and other technical grounds (such as mounting marks on the fragments which fit the pattern of mounts on the wall for the Severan Plan) by Rodríguez-Almeida (forthcoming). Rodríguez-Almeida illustrates, for example, the findspots of several fragments away from the room of the Plan, including fr. 301 in the Forum of Caesar, and fr. 350a in the Basilica Aemilia.

many minor errors and were frequently inconsistent.¹⁶⁴ The Temple of Minerva in the Forum Transitorium (Fig. 2.36) is an example not far from the Temple of Castor on the Plan where two sides of a temple are asymmetrically treated, showing that the differing treatments on the two sides of the Temple of Castor is not such conclusive proof of two separate Plans as it might reasonably have seemed.

An inscription has been advanced toward the argument for a Vespasianic marble plan as well.¹⁶⁵ Found in the general vicinity of the *Templum Pacis*, the inscription attests a restoration of a Vespasianic project carried out by Severus and Caracalla, but it does not identify exactly what the project was.¹⁶⁶ The dedication date of the Vespasianic project is specified as A.D. 77, which is two years later than the dedication of the *Templum Pacis*. Castagnoli suggests that it seems likely that the marble plan, an addition to the *Templum Pacis*, might have taken those two years to complete, hence the later date of A.D. 77. The inscription belongs to a *Templum Sacrae Urbis*, an unknown structure sometimes identified as Hadrian's Temple of Venus and Rome.¹⁶⁷ With the nature of its attribution so uncertain, the inscription is too unspecific to warrant attaching it to a hypothetical marble plan without better additional evidence.

Tacitus, writing under Trajan (after the Flavian dynasty and before the Severan), makes a topographic reference at one point in his *Histories* which suggests a commonly-understood view of Rome that held southeast at the top (as in the Marble Plan), making the northeast quarter of the city the “left side” to the viewer: he refers to the Gardens of Sallust as being on the “left side of the city.” (Fig. 1.40)¹⁶⁸ This passage has been taken to support the existence of a well-known city map in his own day, before the creation of the Plan we know; the reference is therefore considered evidence for the putative Vespasianic

164 See discussion of inaccuracies and inconsistencies below, Chapter 2: “Accuracy of the Plan,” and “Entertainment buildings on the Plan.”

165 Castagnoli (1948), p. 285, n. 1, makes this case.

166 *Imp. Caes. Vespasianus Aug. pont. max. tribun. pot. VIII imp. XVIII p. p. censor cos. VIII / Imp. Caes. Severus et Antoninus Pii Augg. felices restituere* (CIL, VI, 935).

167 E.g., by Richardson (1992), p. 338.

168 Tacitus, *Hist.* 3. 82. A mere “left-bank, right-bank” view of the city as facing downstream along the Tiber is insufficient to account for this reference, as nearly all the city lay on the left bank.

plan.¹⁶⁹ Such a frame of reference, however, need not have stemmed from a monumental marble plan, but could have come from a conventional mental image of the city, used in discussion or in other kinds of maps. Southeast-at-the-top became a standard orientation for geographical discussion of Rome, but it is unclear how early this tradition began or whether it originated with a public map of the city.¹⁷⁰ Tacitus' comment cannot establish the existence of a Vespasianic marble plan.

A final archaeological point that should be considered is the fact that the wall of the Plan accommodates the Plan almost exactly. The Plan was mounted five feet above floor level to prevent casual human contact from damaging it, but fills the entire remaining wall surface, spreading to both sides and to the ceiling. The Plan's size was governed by two factors, scale and scope. This study has already shown that the 1:240 scale of the Plan was a standard Roman architectural plan scale, so it is clear that this factor was not devised to fit the Plan to the wall. The scope of the Plan was approximately determined by the outline of the city's *pomerium*, or sacred limits, so one might suppose that scope was also not devised to fit the wall. The striking coincidence suggests the possibility that the wall was devised to fit the Plan. The Severan reconstruction of the Templum Pacis appears to have been a rebuilding on the Vespasianic foundations, not altering the design of the building.¹⁷¹ Therefore, Vespasian built a building which would exactly accommodate a marble plan of the city within the *pomerium* at the 1:240 standard architectural scale. Framed this way, the coincidence seems too marked to be mere chance, but moderating the connection are two factors. First, the *pomerium* of the city almost but not quite fits the scope of the Plan, especially after the exclusion of some outlying areas (Fig. 1.41). Second, Gatti noted that while the scale for individual buildings is indeed 1:240, it appears that for long distances that average scale is closer to 1:245.¹⁷² This slight alteration of

169 See for example Diike (1985), p. 105; Castagnoli (1975-6), p. 59-69; *PM*, p. 218.

170 The orientation of the Plan and the tradition of southeast at the top of maps of Rome will be discussed below in Chapter 2, "Orientation of the Plan."

171 See Cozza, *PM*, pp. 177-195, for archaeological analysis of this part of the Templum Pacis.

172 Gatti, *PM*, pp. 221-233.

overall scale has the effect of shrinking the map slightly, presumably to fit the available space. So, while the fit of the Plan to the Vespasianic wall is notable, it should not be considered so perfect that a Vespasianic marble plan is an undoubted conclusion.

Reaching even farther back than the Flavian dynasty, some authors have even proposed an Augustan prototype for the Plan.¹⁷³ Agrippa collected the information for a map of the world that was brought to completion after his death by Augustus, and which was mounted in the Porticus Vipsania (named after Agrippa's sister Vipsania Polla).¹⁷⁴ The elder Pliny's references to this map show that it must have been very detailed, but a clear understanding of Agrippa's map cannot be obtained from available evidence.¹⁷⁵ The speculation that necessarily attends discussions of Agrippa's world map has probably encouraged the groundless propositions regarding an Agrippan *Forma Urbis Romae*. This imaginary map is further proposed as the ancestor of the hypothetical Flavian city map.¹⁷⁶ Agrippa's map of the world was no doubt a remarkable achievement, and fascinating because it is of great interest yet so little known, but it has no relationship to a map of the city of Rome.¹⁷⁷

Agrippa also carried out a survey and overhaul of Rome's sewer system, beginning in 33 B.C.; this fact has also been adduced to support the contention that Agrippa created a public map of the city. The vast majority of houses in Rome were not furnished with running water. Very few citizens had the special privilege of tapping an aqueduct, and accordingly the streets were filled with fountains to provide water to the populace. Even in a thorough reassessment of the public water system, a complete room-by-room survey of the city would never have been necessary, and it in any case still does not follow that he would execute such a map for public display in the Porticus Vipsania. While the keeping

173 E.g., Dudley (1967), p. 131; Palmer (1980); Richardson (1992), p. xix discusses the possibility.

174 See Dilke (1985), p. 39-54 on the map of Agrippa and references to it in ancient literature. See also Nicolet (1991), who argues that the *Res Gestae* of Augustus are in part the verbal counterpart to this work of geography, as Augustus catalogues places far and wide where he has fought battles and founded colonies.

175 Pliny *NH* 3.16-17 contains the most specific references to the map and its creation.

176 Dudley (1967), p. 131; Richardson (1992), p. xix.

177 As Anderson (1984), p. 117, has observed: "[Agrippa's map] seems to me to have little to do with the *Forma Urbis* except to confirm the Roman taste for using maps as wall decoration."

of cadastral records of the city may very likely have been organized under Augustus, there is simply no evidence whatsoever for an Agrippan or Augustan wall map of Rome.

The variety and quantity of evidence that can be assembled to support the argument for a Vespasianic marble plan of Rome may make it tempting to accept the case, but no link in the chain of evidence can sustain the burden of proof. A Vespasianic marble plan would be no anomaly, but it must be accepted that at present a predecessor to the Severan Marble Plan is nothing more than a hypothetical possibility.

CHAPTER II

GRAPHIC ANALYSIS OF THE MARBLE PLAN

Introduction

The architectural conventions used on the Severan Marble Plan have received attention in the important editions of the monument, and the basics of the Plan's visual language are reasonably well understood.¹ This chapter will reconsider some of the conventions of the Marble Plan, but in interpretive contexts as well as purely descriptive ones. Some basic aspects of the Plan will be reviewed for background, such as its orientation, scope, and scale. Then the focus will turn to the kinds of lines on the Plan, since this is one genre of symbols that has not been sufficiently clarified yet. From there will follow considerations of two building types appearing on the Plan, temples and entertainment buildings. Here the analysis will seek general conclusions from the series of specific data. The graphic treatment of architecture conveys information not only about the buildings illustrated, but about the intentions, priorities, and practices of the Plan's designers. The questions of what the engravers were willing to simplify, what features they were most concerned to give careful treatment to, and what features are emphasized on the Plan will be explored. In the course of this consideration, a consistent pattern emerges which is revealing about the light in which the Plan was conceived. Conceptual factors affected the representation

¹ Gatti and Cressedi offer a descriptive "map legend" in pp. 199-210 of the landmark 1960 edition of the Plan, *La Pianta Marmorea di Roma Antica: Forma Urbis Romae* (here *PM*). Zığans (1941) discusses the staircase conventions in particular.

of buildings on the Plan as much as architectural structure did, and understanding this is important for those who read the Plan.

The close analysis will support the investigation of other problems posed by the Plan. A primary one is the question of how the Plan relates to Roman mapping. Is the *Forma Urbis Marmorea* the greatest example of the art ever created, the exemplar of Roman urban survey? Harvey has called it “the most impressive monument we have of the work of the Roman surveyors...remarkable both in the sophistication of its cartography and in its general accuracy.”² Can we judge the urban survey discipline on the basis of the Marble Plan? Or does the Plan have a unique status, distinguished from the urban survey tradition attested by the other stone plans? I will argue that it is important to understand the basic features that separate the Plan from the tradition on which it was based, but that it did not represent.

The accuracy of the Plan is a matter of special interest for topographers who depend on its details for reconstructions and interpretation. This subject has been confronted in individual cases, but a general consideration has not yet been presented; that will be taken up here, and the conclusions will provide a guide to the accuracy of the Plan. Additionally, many important fragments of the Plan are now lost, and are known only from drawings made during the Renaissance. The fidelity of these drawings is also closely examined in this study, as they are now primary evidence for numerous fragments. The assessment of accuracy presented here will allow those who use the Plan to understand just how reliable its details should be considered.

These graphic analyses and studies of the Plan will then lead to the confrontation of another of the problems of the Plan, the enigma of its purpose. A variety of suggestions have been offered, ranging from identifications of the Plan as a document vital to the office of the urban prefect to the conclusion that the Plan is nothing more than a decorative monument. Both extremes seem to account for only parts of the data, rejecting others in a

² Harvey (1980), caption to figures 73 and 74.

search to make sense of the giant anomaly. I will show that the graphic analysis and correct placement among Roman maps allow only one conclusion as to its function, and that it belongs with the great monuments of Roman display more than with those of Roman utility.

Finally some of the psychological implications offered by this document will be considered. It is unique in world history, and its peculiarity as a cultural artifact has perhaps been under-appreciated. The public posting of a map showing every ground floor room in a whole city is a curious act, and provokes some thought on the issue of public and private space in the Roman mind.

With the Plan securely placed in its proper context and understood for what it is, and what it can offer, the foundation will be in place for the second half of this dissertation, which involves architectural and urban analysis of ancient Rome.

Basic Scheme of the Plan

Over 42 ft. tall and nearly 59 ft. wide (about 13 m by 18.1 m wide--as tall as a four-story building), originally occupying approximately 281 square yards (235 square meters) of marble surface, the *Forma Urbis* presented a map of the city centered on the Capitoline Hill, the traditional and ceremonial heart of Rome (Fig. 2.1).³ The designs were engraved into smoothed light gray marble slabs and highlighted with the standard Roman Imperial inscription pigment *minium*, which is a bright red-orange (Fig. 2.2).⁴

Orientation of the Plan

The Plan was oriented in its original mounting such that the top of the map was 43 degrees east of south, rather than our customary north (Fig. 2.3).⁵ Castagnoli has

³ Cressedi *PM*, p. 199. These figures are derived from Cozza's study of the wall on which the Plan was mounted (see esp. *PM*, p. 181). It is not possible to determine the original borders of the Plan to the precise centimeter, but these measurements can be considered very close.

⁴ That there was monochrome coloring applied to all the engraving and inscriptions of the Plan is not as widely known as it might be (cf. Harvey [1980], p. 128).

⁵ *PM*, p. 225-232 discusses the determination of the orientation of the Plan, which can be checked, as Harvey (1980), p. 128 has described, "wherever an identifiable building or other feature occurs on a

examined the issue of orientation in Greek and Roman cartography.⁶ As he shows, the Greeks typically employed a north-at-the-top orientation just as we do: the famous world map of Ptolemy is a fine example of this (Fig. 2.4). Prior to Castagnoli's work it was commonly accepted that east was the primary direction of Roman orientation, but from his analysis of literary sources he convincingly demonstrates that the customary orientation in Roman cartography was south. This literary examination is necessary since we lack enough actual examples of Roman maps in which the orientation can be determined from which to draw any kind of general conclusion. Diodorus, Strabo, Pliny, and other ancient authors, however, make references to this or that region lying "to the left" or "to the right," which show that the point of orientation is understood to be south. There are exceptions, and some cases are open to interpretation, but it is clear that a southern orientation generally was adopted.⁷

The historian Tacitus remarks on the topography of Rome in such a way that shows that his reference orientation is toward the south, or, more particularly, to the southeast, exactly like the *Forma Urbis*.⁸ Castagnoli also cites the numbering order of Rome's fourteen Augustan city wards, the first of which is in the southeast quarter of the city (Fig. 2.5). Castagnoli uses these two examples to support his argument for a southern orientation in the Roman world, but for the city of Rome itself, taken together with the definite orientation of the Marble Plan, they make a case for a traditional orientation specifically toward the southeast. Tacitus' casual mention suggests that this was a commonplace understanding.

Some confusion on the subject of orientation in Roman maps has resulted from a suggestion regarding the only other known example of a large Roman marble map.⁹ The

fragment with a straight side that shows the edge of a tablet." Cozza's study of the wall on which the Plan was mounted established the original layout of the engraved slabs (see his chapter on this study in *PM*, pp. 177-195).

⁶ Castagnoli (1976).

⁷ The Peutinger Table, for example, is oriented with north at the top (for discussion of this map see Dilke [1985], pp. 112-120 and 193-195; it is illustrated in McEvedy (1967), cover and frontispiece.

⁸ Tacitus, *Hist.* (III.82), as discussed above in Chapter 1 under "Predecessors of the Plan."

⁹ The cadasters were discussed above in Chapter 1.

three separate cadaster maps of Arausio (modern Orange, France) seem to have differing orientations, and it was proposed by Oliver that cadasters A, B, and C had south, west, and north at the top respectively, so that they could be mounted on three separate walls to present “point of view” orientations for the viewer.¹⁰ In other words, facing cadaster A, the viewer would see that map showing west to his right, as in reality the direction west would lie to his right. This is an appealing suggestion, but it is a most casual one since we know virtually nothing about the original mounting of these large (18 ft. tall, about 5.5 m) cadasters, and since Oliver seems to be in error regarding the orientations of two of the cadasters, B and C.¹¹ Oliver proposes that “point-of-view” orientation was a typical practice since he makes the inapplicable generalization that “it was not prescribed for ancient maps on marble that north or south or east or west had to be at the top”.¹² He says that “it is the three maps at Arausio which reveal the [supposedly customary point-of-view orientation] practice,” but he can adduce no other examples to support that this, even if true, was anything but a unique case at Arausio.¹³ However, his passing mention of the *Forma Urbis* has apparently misled some into believing that the *Forma Urbis* would serve as such an example, as the Plan has been referred to as “orientated to face roughly the way the public was looking.”¹⁴ However, this is not at all the case: the Plan’s top is almost exactly southeast, and it is mounted on a wall which the viewer saw, from the center of the room, as almost exactly southwest, or 90 degrees away from a point-of-view orientation.

From Tacitus and the work of Castagnoli we may assume that the orientation of the *Forma Urbis* is related to a tradition (south or southeast) that existed specifically for Rome, and (south) seems to have been a general default for Roman geographical discussion.¹⁵

¹⁰ Oliver (1966).

¹¹ Dilke (1985), p.109

¹² Oliver (1966), p. 1078.

¹³ *ibid.*

¹⁴ Dilke (1985), pp. 104-5.

¹⁵ The southeast-at-the-top tradition for maps of Rome persisted until at least the twelfth century, as a preserved map from that date attests (Fig. 2.6).

Scope of the Plan

The Plan included nearly all of the area of the city that lay (at the time of the Plan's creation) within the *pomerium*, or sacred boundary of the city (Fig. 2.7). This delimitation of the Plan means that areas of the city within the *pomerium* to the extreme southeast were excluded from the plan, including points that would be of interest to us such as the Porta Maggiore and the site on which the Baths of Caracalla would soon rise.¹⁶ But the Capitoline and the *pomerium*, rather than the full extent of urban development, seem to have been the main elements governing the focus and scope of the Plan.¹⁷ This is not surprising given the symbolic significance of both these landmarks, but it is interesting to observe the influence of symbolic values over perhaps more practical ones in the determination of the scope of the Plan. This, as we will see in the following sections, is consistent with the prominent role that conceptual factors, rather than strict logic, played in shaping the form and specifics of the Plan.

Scale of the Plan

Harvey's description of the scale of the Marble Plan needs no alteration:

“...Gatti has shown that its intended scale is 1:240, that is, in terms of Roman measurement one *pes* on the map corresponds to the length of the *actus duplex* on the ground. Its actual [overall] scale is very slightly smaller. As the plan is so fragmented it is not easy to check lengths, but Dr. Gatti was able to establish the lengths on the plan of thirteen substantial distances; if the scale is taken as 1:245, eight of these measurements are within 3 percent of being correct, while the other five show variations of from 5 to 17 per cent. As what we have is not the surveyors' finished drawing but a copy that must have suffered some loss of accuracy in being set out and carved on a large vertical surface, these calculations point to fairly exact surveying. One interesting feature of Dr. Gatti's figures is that the longer lengths are

¹⁶ Richardson (1992), p. xix. The earliest brickstamps in the great Baths of Caracalla date to A.D. 211/212 (Richardson (1992), p. 387), about the time when the Plan must have been completed. One wonders whether the scope of the Plan might have been adjusted to include this major Severan dynasty monument if the Baths had existed when the Plan was being drawn up.

¹⁷ Dilke (1987), p. 226, asserts that the Plan covered “the exact area of the city's limits at the date when it was constructed,” but it is important to realize that the “city limits” defined by the *pomerium* were only ceremonial, and that urban development had long ago exceeded the old sacred boundary, which was only rarely expanded in an effort to keep pace.

more accurate than the shorter ones: of the eight that are over 1200 yards (1100 meters) only one is more than 3 per cent out. This may be because the surveyors' inaccuracies one way or the other in their measurements simply cancel out over the longer distances. On the other hand it may point to an accurately constructed framework for the whole plan, with a less exact filling in of detail within its individual sectors; but how this framework was made we do not know."¹⁸

In the eight comparable Roman architectural plans the scale is usually difficult to determine exactly.¹⁹ The Via Anicia plan, an exception, is known to be exactly 1:240, since it is comparable to a fragment of the *Forma Urbis* that shows the same architecture.²⁰ The Perugia plan is presented at three different scales, one of which is approximately 1:230 (determined from the measures in Roman feet that accompany the drawing). One way to determine the approximate scales of the plans lacking measurement annotations is to examine doorways. Doorways shown on the Marble Plan typically "scale up" to about 3.5 or 6 ft. (1 or 2 m) in width, some being single and some double doorways as is familiar from the residential doorways and shop fronts in Pompeii and Herculaneum. The Via Labicana fragment shows doorways that scale up to 4 ft. and 7 ft. (1.3 m and 2.4 m) in width at a presumed 1:240 ratio, and this is therefore reasonable. Most of the Isola Sacra plan's doorways scale up to approximately the same two measures at 1:240. The Amerino plan is preserved only as a drawing, but its character is extremely similar to that of the other plans and it is not unreasonable to suppose that the original was the same 1:240.²¹ The 1:240 scale of the *Forma Urbis* places it therefore as part of a consistent tradition in Roman building plans. It may be safely concluded that the city survey plans would have been kept at this scale as well; it is from these plans that the *Forma Urbis* was directly drawn.

¹⁸ Harvey (1980), p. 130, referring to work by Gatti in *PM*, pp. 206-7.

¹⁹ The other plans and their scales have been discussed above in Chapter 1, and also by Gatti (except for the Via Anicia fragment) in *PM*, pp. 209-210.

²⁰ Rodríguez-Almeida (1988), p. 122.

²¹ Gatti also felt it reasonable to presume that these three plans employed the scale of exactly or nearly 1:240 (*PM*, p. 210).

Perspective

Plan view

The Marble Plan is a map of Rome's architecture, nearly all laid out in strict overhead view, "plan view" in architectural parlance. As Harvey has noted, this is remarkable in the history of city depictions, since, as he has demonstrated, virtually all others across many cultures and time periods take the form of "bird's eye" or "illustration-style" views, which mix perspectives (Fig. 2.8).²² The engraving depicts architecture, not merely monuments or the outlines of city blocks, but almost *every* ground-floor room in the city, whether it be a wing of a grand public portico or the back closet of a low-status residence (Fig. 2.9).²³ The lines presenting this phenomenal amount of detail are determined by a rationale still in modern use: they indicate the intersection of walls and columns with an imaginary horizontal plane a short distance above the ground floor.²⁴ This rationale is suspended in some important cases, notably for large monuments such as theaters, where we find schematic "aerial views" rather than the plane-intersect lines. This phenomenon and the reasons for it will be discussed below, in the section covering entertainment buildings on the Plan. The only exception to the topographic plan view perspective is the rare occurrence of elevation views on the Plan.

Elevation view

The overhead angle of view is dispensed with in favor of an elevation, or side view, in the unique case of the Aqua Alsietina (Fig 2.10). Rodríguez-Almeida has explained this alternative point of view: the aqueduct runs through an open area of the city in this sector, and with a greater amount of blank area on the Plan, the artist took the opportunity to employ a convention which took up more of this space and was also more readily

²² Harvey (1980), captions to figures 73 and 74. In this book Harvey devotes several interesting chapters to the "picture map" in various periods and regions.

²³ "Nearly every room," because the aerial views of some mass audience seating gloss over the ground-level structures.

²⁴ Cressedi, in *PM*, p. 199.

recognizable than the standard convention for the aqueduct in plan view.²⁵ This worked very well for the course of the aqueduct that ran horizontally across the plan (fr. 37Bb-e), but where the aqueduct turned to follow the Janiculum and ran vertically down the Plan, the alternative convention did not seem as perfectly appropriate, and a compromise was employed involving two parallel lines indicating the actual course in plan, accompanied by the side view of arches alongside this actual course. The result left the side view arches without a line indicating their connecting cornice, an oddity.

The fact that the Aqua Alsietina example is a unique instance of elevation in the surviving sample of the Plan, and the fact that it is handily carried out in one stretch and oddly compromised in another suggests that this was an *ad hoc* solution to a particular situation rather than part of a preconceived design scheme. It is also clearly a concession to readability, adopted for attractiveness and legibility in spite of the compromise in accuracy and true plan information. The Aqua Alsietina is immediately recognizable as an aqueduct to anyone looking at the Plan, while the standard symbol convention for aqueduct requires understanding of the graphic code involved (Fig. 2.10). The mixing of plan and elevation views in a topographic map is comparable to what we see in modern tourist maps of cities such as Paris or Rome that show a formal street plan with a major monument, such as the Eiffel Tower or Colosseum, superimposed on its location in an elevation view simply for recognition's sake (Fig 2.11). The basic scheme, important for general accuracy, is suspended in an individual instance for the sake of easy recognition and clarity. The elevation view of the Aqua Alsietina is evidence that the Plan was intended to be readable, where possible, to more than just the specialist audience well-accustomed to using the standard symbol language of the *mensores aedificiorum*. Readability to non-specialists was enough of a priority to allow the suspension of precise plan information in the case of the Aqua Alsietina, but not enough to incur the distortions

²⁵ Rodríguez-Almeida, *FUM*, pp. 144-45.

that would have resulted if this side view convention were used for aqueducts in built-up areas.

Lines on the Plan

The lines of the *Forma Urbis* are not always what they seem. Lines have been unfortunately misinterpreted in a number of studies, and their varying meanings have not been made explicit to prevent this from occurring. Clearly they indicate walls most of the time (Fig. 2.9). But figures 2.17-2.22 demonstrate they could also indicate the edges of temple podia. This ambiguity can lead to difficulty in interpretation, as in the case of the Hecatostylum (Fig 2.12). Hülsen read the line between the two files of columns as a wall, and according to this reconstruction likened the structure to the Poikile of Hadrian's villa at Tivoli.²⁶ Richardson, however, correctly read the line as denoting a *step up* to the inner colonnade, changing this inner space from Hülsen's sealed-off cryptoporticus to merely a deeper area of shade within an open portico.²⁷

The issue of line meaning is more complex and interesting than it might appear at first glance. A line can indicate a number of different things on the Plan.²⁸ I have developed the nomenclature used in the following presentation to support the distinction of the different line meanings. Four different categories of lines account for nearly all of the Plan's engraving: guide lines, mass lines, edge lines, and outlines.²⁹ A fifth category, boundary lines, is notable for its absence. With these different possible meanings clearly laid out, the Plan's dense mass of lines is much easier to approach, with the hope of a fully intelligible reading.

²⁶ Hülsen, in Jordan (1907) vol. 1, pp. 532-533.

²⁷ Richardson (1992), p. 185.

²⁸ Cressedi, in *PM*, treats lines among his discussion of other symbols on the Plan (pp. 200-202). He distinguishes between "single and double lines", and discusses guide lines, and in his discussion mentions all the different meanings the lines can bear. My intention with these categories is to make the several separate line meanings more clear and distinct, and to provide a terminology that supports analytical discussion.

²⁹ Inscriptions are of course a separate matter.

Guide Lines

Gatti tabulates numerous examples of subtle guidelines traced onto the marble of the Plan as guides for the engravers.³⁰ These occur for both architecture and inscriptions, providing (for example) alignments for column rows. These faint lines were not, of course, treated with paint, and were not meant to be visible as part of the finished Plan; therefore they do not form part of its graphic interpretation. They are distinctly more subtle than the engraved lines of the Plan.

Mass Lines

Here the line alone indicates the mass of a wall (Fig. 2.13). This is the normal or “default” meaning of lines on the Plan, as is readily apparent from most sections, which depict numerous walls. This use of the line is perfectly comparable to modern archaeological illustration practices for depicting sections of cities (Fig. 1.3).

The engraved lines depicting architecture on the Plan are on average about 1/16 in. (1.5-2 mm) wide, which at the Plan’s standard scale of 1:240 would indicate walls of roughly 15 in. (36-48 cm) thickness. This line width was almost certainly not chosen for its scale, but for its practicality in engraving and its visibility; still, it accounts for the entire mass thickness of an ordinary wall. A typical mass line on the Plan does not therefore happen to be a symbolic condensation of actual mass, though it would be if the scale of the Plan were any larger.

Edge Lines

Here the line indicates the edge of a mass, rather than the mass itself. The top surface of this mass would usually have been visible from overhead. Such edge lines are found delineating temple podia, steps, and also occasionally the edges of sidewalks or the

³⁰ *PM*, p. 200.

perimeters of rooflines (Fig.2.14). It is much less common on the *Forma Urbis* than the mass line.

The edge lines are engraved with the same width as the mass lines, often making them difficult to distinguish. The two types can be distinguished only by context. In the case of temple podia this is easy, but in other cases it can require some consideration. The instance of the Hecatostylum mentioned earlier is a good example (Fig. 2.12); Richardson considered “implied reconstructions” of each interpretation sufficiently to realize that in context, the center line as a mass line (wall) would render the accompanying file of columns useless and extremely unlikely inside what would then be a cryptoporticus.³¹ It is this kind of contextual consideration that must be used to identify edge lines.

Outlines

Outlines trace the perimeter of the “footprint” of an architectural mass, where it would contact a horizontal surface (the ground, a terrace, or a podium--see Fig. 2.15). This is an alternative convention to the mass line for depicting a wall. In the Plan it is employed for cella walls, and for occasional column bases. The area within the enclosing outline is often recessed for the purpose of *emphasis*: the entire recessed area was covered with inscription paint, resulting in a much broader and brighter band of red color than the simple mass line gives.

The outline convention is found in all of the other more precisely rendered Roman building plans, where it is the normal or default mode of indicating walls. In an example such as the Via Anicia Plan the outline convention does *not* carry the added meaning of emphasis. The outline convention only achieves this meaning in the Severan Marble Plan by its contrast with the general context of mass lines.

Theoretically, the outline is the more precise way to delimit the dimensions of actual architecture than the simple mass line, which does not vary in width to match the scale of

³¹ Richardson (1992), p. 185

the wall indicated. However, in the Forma it is the *outline* convention that results in a variance from true scale. Many cella walls, for instance, indicated in outline would scale up to 5-6.5 ft. (1.5-2 m) wall thicknesses or even greater (Carettoni cites a not unparalleled 11.8 ft. [3.6 m] example), which is generally unrealistic.³² Carettoni thought that the outline convention “always indicates a wall of greater thickness than those indicated by the single [mass] lines” even when the outline did not accurately represent that thickness.³³ Even where a thicker wall is in fact indicated, the real significance of the outline convention is *not* simply wall thickness, nor the greater accuracy it could potentially allow, but instead the *emphasis* it provides with the greater recessed area and the amount of *minium* color it accommodated.

What we find in the outline convention, then, is another feature of the Plan that tends to sacrifice strict accuracy for clear visibility of certain more significant elements. The elements thus emphasized are, first and foremost, temples. Other features given emphasis are aqueduct pilasters (fr. 4), pilasters of the Porticus Aemilia (fr. 23,24), the structure of the Septizodium (fr. 7a), the box seats at the Ludus Magnus (fr. 6b-f) and several unidentified features which may be garden plantings.³⁴ It must be stressed that the use of the mass line as the default for the Marble Plan sets it distinctly apart from the other Roman architectural Plans, and from the standard Roman urban survey tradition of architectural depiction. The simplifications and ambiguities which result from the failure to use the outline convention in most of the *Forma Urbis* are particular to this document alone, and do not represent the developed state of utilitarian Roman architectural mapping.

Boundary lines

Boundary lines would indicate juridical and other non-physical administrative or nomenclatural boundaries, such as the divisions between the fourteen Augustan *regiones* (city wards), their subdivided neighborhoods (*vici*) or the pomerium. They could even

³² *PM*, p. 202.

³³ *PM*, p. 201.

³⁴ Carettoni, *PM*, p. 202, provides a list of these, which are parallel stripes occurring on small non-located fragments.

delimit the borders of a river (though this might be considered an edge line application). However, boundary lines are not found on the Marble Plan.³⁵ This total absence of boundary lines is one of the most striking features of the Plan. It seems extraordinary that it entirely excludes them, but the surviving sample is sufficient to support the assertion that they were never engraved. They are likewise not to be found on other Roman architectural plans in stone. Such boundaries virtually always occur in modern plans of this type, so their apparent total absence in the Roman plans is a most interesting difference from what we would expect. There are no indicators of the many geomorphologic features of the hilly city of Rome. Not even the Tiber is shown--the river is left to be inferred by the lack of architecture in its path. Areas without architecture, like the river or gardens (*horti*) in the Transiberim region (modern Trastevere), are depicted as completely blank (Fig. 2.16). As has been discussed above, the exclusion of boundaries from Roman urban survey maps is a feature that distinguishes them from the boundary-focused field survey maps. However, the point bears importantly on consideration of the Plan's purpose. The Plan was never meant to be used to identify which administrative neighborhood or ward a given location lay within, which is a use one might have expected from such a document. Nor would it even indicate whether a place was within or without the pomerium. The Plan was not used to identify localities as belonging to regions.

With its absolutely exclusionary focus on architecture, and its omission of natural features and administrative notations, the map presents a gigantic statement, whether intentional or not, that what is significant in the city of Rome is only that which man has built. It is tempting to see in this an expression of the degree to which traditional Roman culture equated the significant with the tangible.

³⁵ It is a common and reasonable assumption, but a mistaken one, that they exist on the Plan (cf. Nicolet [1991], p. 158). Roads, for example, might be indicated by boundary lines marking their edges, but these do not appear. Roads are only indicated by the lack of architecture in their paths. Only boundaries made physically real by architecture appear.

Temples on the Marble Plan

We turn now to the analysis of some specific architecture on the Plan. From a close look at temples, and at entertainment buildings on the Plan, it is possible to draw some interesting general conclusions which underline the importance of conceptual factors in the shaping of the architectural representations. Some features of the engravings on the Plan carried conceptual significance, while others conveyed architectural information. The analysis here will help to clarify and distinguish between the two components of the Plan's communication, so that one is not mistakenly read as the other.

The first building type for analysis will be temples, which form a special class of buildings on the Plan, depicted with a special set of symbols. Architectural elements such as columns and walls are treated differently for temples than they are for other structures, in several ways, with the result that temples are particularly emphasized within the mass of detail on the Plan. The exact nature of this distinction will be discussed in this section. Temples also provide a particularly good subset of symbols for close analysis because in their typical form they are a well-understood building type. Often individually enumerated and described in literary accounts, they are also frequently among the better-preserved ruins due to their splendor and notoriety. Accordingly, this section will review all examples of structures identifiable as temples on the Plan, assessing their graphic treatment. The findings will then be synthesized to form conclusions about the special graphic codes for temples.

As the Plan itself makes clear, for this discussion it is necessary to distinguish temples from minor shrines, which are not depicted with the same conventions applied to more significant temples. "Temples" are, for present purposes, those structures of classical Greek or Italian plan, rectangular with columns around or before a cella (peripteral, peripteral *sine postico*, or prostyle). Religious structures so small as to have fewer than four columns in the façade, or which take other unusual forms, are normally treated differently by the Plan and are separate from this discussion, with the exception of a round

temple which is treated here. Figures 2.17-2.22 collect all the temples that appear on the Marble Plan, and serve as a reference for this section.

Contrast to other architecture

Temples are made to stand out from the mass of architecture on the plan by a special set of conventions distinct from those applied to ordinary architecture. Three conventions usually distinguish a temple (Fig. 2.23):

- (1) The cella is defined with outlines rather than the ordinary mass lines, resulting in a characteristic double-line appearance as the outline traces the footprint or plan of the cella walls. The area within this outline is often recessed for added definition. The 1/240 standard scale of the plan is not intended to be applied to the thicknesses of these emphasized cella walls; the out-of-scale thickness is merely part of the convention.³⁶
- (2) The exterior columns of a temple are depicted not with the dots normally used for columns, but with squares or dotted squares (which, like the cella walls, may be recessed). This convention is analogous to that emphasizing the cella in its effect of making the columns more prominent. Interior columns, if they appear, are still depicted by dots, probably because there is too little room within the cella for the larger-than-scale square or dotted square symbols.
- (3) The temple podium is defined by an edge line.

Not all temples have all these conventions. Sometimes the podium edge line is omitted (frs. 16a, 37.2, 237) or the exterior columns may appear as dots instead of squares (frs. 22b, 37.2). These conventions also appear separately (and rarely) in buildings other than temples. Outline is used to define the structure of the Septizodium (fr. 8) and the *scaenae frons* of the Theater of Pompey (fr. 39); edge lines are employed for the fountain or statue

³⁶ Many cella symbols would scale up to unrealistic 1.5-2m wall thicknesses. As mentioned earlier, this is unrealistic, indicating convention rather than accuracy.

base in the center of the Porticus Liviae (fr. 10) and for the edges of built-up parts of the Tiber banks (fr. 27); squares for columns are seen in the Imperial box in the Circus Maximus (fr. 8) and for the columns or piers of the Porticus Aemilia (fr. 24). Nonetheless, as the table shows (Fig. 2.24), the complete set of special conventions occurs in most temples on the Plan (19 out of the 31 clear examples; 24 have at least two of the conventions), and an intentional distinct treatment is clear. The fact that these conventions are not applied to some of the smaller structures identified (sometimes tentatively) as minor shrines (frs. 20e-g, 32, 35a, 35 f-g, 35h-m, 277) is probably due to the difficulty of fitting all these enlarging symbols into the space available for the buildings.³⁷

The following closer look at some of these special conventions establishes their significance, and explains some of the variations. First for consideration is the use of particular column symbols in temple depictions. Columns are represented in three ways on the Plan: as dots, squares, or dotted squares (Fig. 2.25). Until now it has not been clear whether the three different symbols carry different meanings, or whether they are completely interchangeable “synonyms.” Harvey, for example, supposed that dots might “mark columns...and both dots within rectangles and small rectangles alone, either in outline or hollowed out, presumably mark columns standing on square bases.”³⁸ This reasonable suggestion fails to account for the fact that dots are commonly used to represent columns on square bases as well, for example in the Ludus Magnus.³⁹ Cressedi proposed that the different meanings exist only where the dot is found together with one of the square symbols.⁴⁰ The pattern of use found in temples suggests that there *are* different

³⁷ The temple on fr. 31a-c.2, which has all the special temple conventions, is as small as the supposed minor shrines of fr. 32 or 35a, but the cramped fine work required of the fr. 31a-c.2 depiction is much finer than is normal for the plan. It should be regarded as an exception due to a particularly good artist.

³⁸ Harvey (1980), p. 128.

³⁹ Colini and Cozza excavated the Ludus and found its colonnade, depicted with dots on the Marble Plan, to consist of Tuscanic columns on square bases (Colini and Cozza [1962], pp. 29, 37).

⁴⁰ Cressedi, *PM*, p. 202. He also noted the unexplained oddity that the square and dotted square symbols are never found together. An explanation for this is offered below.

meanings carried by the different symbols, but that these are principally *conceptual* meanings rather than the architectural ones that have been sought.

The outlined cella

The outline convention is standard for the temple cella, as already discussed (28 out of 37 determinable cases), rather than the mass line used for all other walls on the Plan. All instances where this outline convention is lacking in a temple are also in some other way unusual:

- fr. 21 crudely and irregularly drawn, with columns not well aligned, and with the columns as dots rather than squares.
- fr. 35f-g dots rather than squares for columns
- fr. 35h-m dots rather than squares for columns
- fr. 273b the entire image is extremely crude and asymmetrical. Rodríguez-Almeida reads this as a temple ruin.⁴¹
- fr. 338 dots rather than squares for columns
- fr. 409 lacks podium edge line

The cella emphasized by outline was an important standard, which may have been omitted in error, or possibly omitted when the emphasis that the outline carries was for some reason not desired. This latter would explain the lack of the convention in the ruin (fr. 273b), and perhaps also in the cases of the smaller shrines, such as those of the Divorum (frs. 35 f-g and 35 h-m) or that of the Curiae Veteres (fr. 452d), where the general structure to which the shrines belonged was already clearly identified and emphasized by inscription.

Squares for exterior columns

The square is used most commonly for exterior temple columns, occurring in 16 out of the 31 temples in which exterior column type can be determined. Dots and dotted squares

⁴¹ Rodríguez-Almeida, pers. comm. Nov. 1994.

make up the balance in nearly equal measures (7 and 9 cases respectively; one temple has both of these types).

All cases of dots for exterior columns occur in cases which are unusual in some other respect also:

- fr. 5 the podium has no edge line and the section is preserved only in a Renaissance drawing which may be an inaccurate record of the original engraving
- fr. 22b the front steps are not indicated by the customary parallel lines
- fr. 31d there is a combination of both dotted squares (for the front row only) *and* dots representing exterior columns
- fr. 18 the temple represented is a tholos type
- fr. 277 the element is so fragmentary that it may not even be a temple
- fr. 338 the “cella” is not represented in the normal double-line fashion, if indeed this is a temple

My conclusion is that dots used for exterior columns of temples were the work of confused or less-professional engravers, who strayed from the “standard” square symbol for temple exterior columns. In the unique case of fr. 31d (which Coarelli suggests is the Temple of Bellona), the engraver may have been trying to indicate an actual difference in architectural feature with the two types of symbol used for the column, but this temple is archaeologically unknown and the question cannot be settled.⁴² In sum, the dots for temple columns occur in abnormal situations and usually represent the work of an engraver using non-standard or sub-standard practice.

Dotted-square exterior columns

Most cases of dotted square exterior columns are localized near others.⁴³ All but one (fr. 237) of the cases of dotted squares as exterior columns are cases of ‘attached’ squares rather than ‘floating’ ones (see Fig. 2.26), and this argues further for stylistic unity--and

⁴² On the temple identification: Coarelli (1968).

⁴³ Six of the nine cases are certainly located in fr. 31. Of the remaining three, the location of two is unknown.

for excluding fr. 237 from this group. Fragment 237 is further distinguished by the fact that its recessed surface is significantly deeper than all those of the group in question, which are recessed to a similar degree.⁴⁴

The spatial grouping of these cases of the dotted-square symbol, together with the associated stylistic features, strongly suggests an individual engraver's preference rather than a specific meaning of this symbol. The amount of work attributable to this hand is certainly not more than one would expect from a single artist, so for convenience he may be called the "dotted-square engraver." He is the only one who ever puts statue bases in these temples of standard plan (all three existing cases), and he is likely to include exterior altars (certainly attributable to him are two of the five cases of illustrated exterior altars).⁴⁵

The dotted squares, on the strength of the proximity of the six cases from fr. 31 and the continuity of style in two of the other cases, appear to constitute nothing more than an individual preference. The dotted square symbol is an exact synonym for the square, without any different architectural meaning whatsoever. The only difference is that the dotted square is, on the Plan, the mark of a particular artist. Further, it is now clear that the primary meaning of both the square and the dotted square is "column in a building of special interest," as opposed to the dot symbol, which indicates "column in an ordinary building" (Fig. 2.27).⁴⁶ Only when the dot and the dotted square occur in the same structure is any architectural difference indicated (Fig. 2.28).

Interior columns

All four cases of depicted interior columns (see table 1) occur only with square exterior columns. This may suggest that depicting interior columns was a point of fine detail only

⁴⁴ Personal observation, Nov. 1994.

⁴⁵ There are also dotted square columns associated with the statue base that appears in the temple of non-standard plan in the *Templum Pacis* (fr. 15), which is a fourth case.

⁴⁶ Carettoni's supposition that the two kinds of square symbols may indicate an architectural difference when found in the same monument with simple dot columns still seems reasonable. It should also be mentioned that the simple dot is a "homonym" for the dot that signifies a tree or other planting (see *PM*, p. 202).

ever attended to by the engravers careful enough to be following the standard conventions. Where interior temple columns *are* represented, they always appear as dots. This would seem to be a consistent standard, possibly adopted for the sake of limited graphic space within the emphasized cellas. In the Temple of Minerva in the Forum Transitorium (fr. 16a), it is lack of space that caused the engraver to omit some of the interior columns that are known archaeologically to have been present.

Interior columns are shown in only four of the 31 determinable cases. Richardson uses the absence of depicted interior columns in the Plan's illustration of the Temple of Divine Claudius (fr. 5) to assert that, in fact, the temple had no interior columns, but it seems more likely that negative evidence should not be relied upon in a graphic environment such as this where abbreviation and even omission were acceptable.⁴⁷

Conclusions

This review of the graphic treatment of temples provides several conclusions. Temples were specifically treated with differentiating symbols which, together with their customary identifying inscriptions, made them stand out clearly on the Plan despite being surrounded by thousands of individually-delineated structures and rooms. Boldly highlighted with extra red paint in their recessed cella outlines, they would be prominent islands in a sea of little rectangles. While the combination of these emphasizing conventions was not absolutely consistent, the general intention is clear. Very few other kinds of buildings were given comparable emphasis. We must conclude that the scheme of the Plan was devised so that the temples would serve as orienting features for the viewer, not merely significant, but primary. It might be imagined that the Tiber had comparable emphasis as an orienting feature, but it must be recalled that the river was not

⁴⁷ Richardson (1992), p. 87. Even in that very drawing of the Temple of Divine Claudius, the artist has only shown five columns in the façade, an obvious abbreviation. The subject of errors on the Plan will be treated below, under "Accuracy of the Plan."

indicated with any symbol or engraving at all. Rome's temples are the Plan's orienting points.

This emphasis on temples is perhaps not surprising given the strong place of religious observance in Roman society, and the exterior architectural splendor of the temples compared to the general appearance of domestic and commercial architecture. Anyone considering the city's topography would naturally tend to orient on such landmarks, in the real city or on a map. However, the degree of contrast between the thoroughly emphasized and identified temples and the almost utterly anonymous de-emphasized general urban fabric remains striking.

On a more specific level, this analysis of temples has shown that the three different symbols for column--dot, square, and dotted square--are explicable variations that do not necessarily carry any architectural difference in meaning. The only times one should look for different meanings between these symbols is when they occur in juxtaposition in the same monument, as in the temple of Bellona (fr. 31d), or the Porticus Octaviae (fr. 31), or the Templum Pacis (fr. 15a-b). In these cases, the use of the simple dot *together with* either of the square symbols suggests that an architectural difference between the sets of columns did exist.⁴⁸ Outside such special contexts, the three symbols mean the same thing *architecturally*. Their difference in meaning is *conceptual*: the dot is the default for an ordinary column; the square represents a column in a building of special significance. The dotted square is a synonym for the square, but engraved by a particular individual who preferred the style.⁴⁹ The Plan must be read using conceptual analysis as well as architectural and graphic analysis.

All of these special conventions for temples were peculiar to the Marble Plan, not to the Roman urban survey map tradition. The Plan's special conventions for temples

⁴⁸ For the Porticus Octaviae, at least, this is archaeologically supported, since the columns of the propylon (engraved as dotted squares) are set on square bases, while the columns of the peristyle (engraved as dots) sit directly on the stylobate (Carettoni, *PM*, p. 202).

⁴⁹ The "pointed square engraver," and also his imitator, whose work is identified only in fr. 237, as discussed above.

derived their emphatic status only from the fact that the rest of the architecture surrounding them was simplified, reduced on the marble slabs to single mass lines from the original outlines present on the survey sheets. In the standard Roman urban survey plans, *all* walls are depicted with the outlines used specially for temples on the *Forma Urbis*. The columns that appear in the Temple of the Castors on the Via Anicia Plan are more finely rendered versions of the dotted squares, the most elaborate symbol for column found on the Plan. It is likely that this was always used for temples in standard Roman plans. The square appears to have been the default for an ordinary column or pilaster, judging from the use of this symbol on the Via Anicia Plan, the Amerino Plan, and the Urbino Plan (Figs. 1.28, 1.27, and 1.30). This square was simplified to the dot on the Marble Plan. The use of the emphatically contrasting conventions for temples and ordinary architecture on the Marble Plan was a very deliberate aspect of its design, and is a quality which distinguishes the Plan from the standard urban survey tradition. This explanation of the use of these conventions on the Plan should dispel the interpretive confusion that these various symbols may have created.

Entertainment Buildings on the Marble Plan

There are six examples of entertainment buildings with mass audience seating represented on the Marble Plan. Called *cavea* in Latin, the sloped banks of seats for spectators at theaters, arenas, and circuses are a distinctive type of construction. They form another architectural subset of interest for this graphic analysis. A review of the six examples will show that the problem of illustrating buildings with banked seating was solved in several ways by the engravers of the Marble Plan. The depiction of these structures was inconsistent and individualistic rather than standardized as were the depictions of temples. Though this at first may seem to indicate carelessness or a casual approach by the engravers, I will show that these alternative styles of depiction are not

merely random but instead arise from differing conceptions of the architectural spaces represented.

The physical structure of the seating was extremely similar in all six cases, so one might have expected a consistent treatment of the form in their depictions. However, the Roman *experience* of each space involved different factors, and in light of certain practical consideration the varying styles of mass audience seating depiction may be understood. The remaining individuality in these graphic solutions also attests to the special status of the Marble Plan in relation to the discipline of Roman architectural recording and map-making: the highly standardized graphic conventions employed by the professional urban survey tradition apparently did not serve the purpose of the *Forma Urbis* monument, and so alternative conventions were devised *ad hoc* by the several engravers involved.

Review of examples

Considering the fact that only 10% of the *Forma Urbis* survives, we are very fortunate to have an excellent sample of the major mass audience seating structures in ancient Rome from the Plan. Multiple examples of theaters and arenas appear, as well as parts of the greatest Roman circus for chariot racing. I will first review the series of Marble Plan depictions, and then draw conclusions in light of the assembled body of information.

The Ludus Magnus

This amphitheater was a gladiatorial training school instituted by the emperor Domitian, a smaller (but still large) version of the famous Flavian Amphitheater, or Colosseum.⁵⁰ Known archaeologically, this structure will be treated in some detail below in the section on the accuracy of the Plan. Here we are only interested in the seating. The seating is depicted very simply, with only two lines defining the interior and exterior edges

⁵⁰ Ammianus Marcellinus 146 attests to Domitian's construction of the Ludus Magnus.

of the *cavea* (Fig. 2.29).⁵¹ The actual *cavea* was provided with nine ranks of seats, which do not appear individually delineated on the Plan.⁵² Below these seats were chambers within the raised *cavea*, which would have held equipment for the shows; these are not shown either. The depiction provides a few details about these substructures, by showing the doorways to them leading off the main ceremonial entrances to the arena, and also showing the passages leading into the arena on the long sides of the seating oval. The only detail within the seating area is the separate depiction of the high-status box seats. These were reserved for officials presiding over the contests, or for other high-ranking individuals. The recessing of these areas in the engraving shows that they would have been highlighted by bright red inscription paint in the Plan's original state. What appears in this depiction is a compromise: it is as if a low-resolution aerial view of the seating were combined with the Plan's standard ground-floor depiction occurring only at the ends of the seating sections.

The Ludus Dacicus

This is another gladiatorial training school; its arena is about half the size of that in the Ludus Magnus.⁵³ The depiction of the *cavea* is identical to that of the Ludus Magnus, and as these structures were not far from each other on the map, it seems likely that the same engraver produced both depictions (Fig. 2.30).⁵⁴ The same absence of detail within the seating area occurs, and again the doorways leading into the substructures are indicated.

⁵¹ The Marble Plan image of the Ludus Magnus is fr. 6b-f, part of which is known only from the Renaissance drawing of the fragment in a more complete state, preserved in Vat. Lat. 3439 f. 13 r.

⁵² Colini and Cozza (1962) provide a thorough reference on all details of this amphitheater.

⁵³ This is another one of the four training schools for gladiators founded by Domitian (Ammianus Marcellinus 146).

⁵⁴ The Ludus Dacicus appears on frs. 6g(=161) and 13p(=142).

The Flavian Amphitheater (Colosseum)

Several portions of the Plan's image of the Colosseum survive, and they are sufficient to allow the examination of its treatment.⁵⁵ Here many concentric lines give the impression of the individual rows of seats (Fig. 2.31). The lines do not delineate all the actual seats, but in abbreviated form present the impression of the many rows.⁵⁶ Within these ranks, the important divisions--marked by low balustrade walls and annular walkways in the amphitheater--are indicated with heavier engraving on the Plan. These balustrades, or *baltei*, fronted the walkways (*praecinctions*) which separated higher and lower zones (*maeniana*) of seating. Also appearing within the *cavea* are a few representative *vomitoria*, or entrances to the stairways which gave access to the seating. This depiction is an abbreviated approximate aerial view of the Colosseum seating, which is quite a departure from the ground-floor structure that is standard for the Plan.

The Circus Maximus

This gigantic construction was put to many public assembly uses, including athletic contests, animal hunts, and gladiatorial games, in addition to its primary purpose as an arena for the immensely popular Roman sport of chariot racing.⁵⁷ It was the most prominent circus in Rome, and was connected directly with the imperial palace on the adjoining Palatine Hill. The Circus took the form of a large U, and the surviving Marble Plan depicts some of the curved end of the U and parts of the long sides near it. The *cavea* of this and other entertainment buildings was traditionally divided into several ranks by *praecinctions*; these ranks were the lowest (*imae*), middle (*mediae*) and highest (*summae*) *caveae*. In the Circus Maximus (as in some other large mass audience structures,

⁵⁵ The Colosseum appears on fr. 13a-o.

⁵⁶ For the structure of the Colosseum itself, see Steinby (1995), pp. 30-35; Richardson (1992), pp. 7-10; and references provided in these entries. Literature on the Colosseum is extensive. Starting points include Golvin (1988) and Conforto (1988).

⁵⁷ Pompey, for example, exhibited elephants in the Circus as part of his games in 55 B.C.; these broke through the barriers protecting the spectators and caused a panic (Pliny, *NH* 8.7.20-21). See Humphrey (1986) for a thorough treatment of Roman circuses, including the Circus Maximus, pp. 56-294.

including the Colosseum), the highest *summa cavea* were wooden, and were consequently known as the *summa cavea in lignis*.

The Marble Plan depiction of the Circus Maximus seating recognizes several of the features just mentioned, in an unusual and interesting compromise of views (Fig. 2.32).⁵⁸ It appears that the lowermost two ranks of seating are depicted in a fashion similar to that seen in the smaller amphitheaters: we do not see substructures, but instead an aerial view. The lowermost zones or ranks are divided by a *praecinctio*, but individual seats are neither indicated nor suggested. A more significant *praecinctio* division is indicated with double lines at the top of the second rank of seating, and then for the *summa cavea* and *summa cavea in lignis*, we get an entirely different view. In these areas appear the ground-floor substructures prescribed by the rationale that is standard for the rest of Plan. The external structural appearance of all this seating would have been uniform (except for the change from stone to wood). Yet the Plan shows a marked difference indeed. It is a surprising and seemingly incongruous combination of views.

Appearing within these zones are the triple-arched ceremonial entrance to the racing area at the top of the 'U' and the imperial box seats on the long side of the Circus bordering the Palatine palace. As was the case with the box seats in the Ludus Magnus, recessed areas define the box seats of the Circus. Originally filled with bright red inscription paint, they would have stood out prominently.

The Theater of Pompey

In this structure appears yet another very different approach to the depiction of mass audience seating (Fig. 33). Only a Renaissance drawing records this now-lost fragment of the Plan, but it may be depended upon in this striking instance, as the Renaissance copyists were likely to make errors only in minor details.⁵⁹ For the theater of Pompey the

⁵⁸Marble Plan frs. 7a-e, 8b-h.

⁵⁹ The reliability of the Renaissance drawings is established below under "Accuracy of the Renaissance drawings."

engraver has chosen another aerial view that does not indicate individual seats, like the views used for the smaller amphitheaters and the lower seating zones of the Circus Maximus. However, in the depiction of the Theater of Pompey, there appears only the suggestion of one *praecinctio*, and the great emphasis is instead on the radial lines dividing up the seating into wedges or *cunei*. The *cunei* were divisions that could be marked with lines of steps leading up and down the seating zones. They would not have been any more architecturally prominent here at the Theater of Pompey than they were in the amphitheaters and the Circus. Yet here they are emphasized strongly, whereas in the other structures they do not appear at all.

The Theater of Marcellus

The final example is another theater. In the Theater of Marcellus another unique approach to depicting the seating is taken, and we see both *cunei* and seating ranks strongly indicated (Fig. 2.34). Indeed, the concentric lines indicate more divisions than there were *praecinctiones*, so in this case the lines suggest the structure of seats and of rank divisions without specifically indicating either. The lines delineating the *cunei* interrupt the concentric lines, making it appear that they run over those lines. This has no architectural significance, and is only the case because the radial lines were engraved first, without any gaps left for the intersections with the concentric lines. The lines indicating the *cunei* were the engraver's first priority.

Explanation of differing treatments

This diversity of approaches has been noted by other scholars, and it is of course clear that most of them represent a kind of aerial view markedly different from the ground floor plans seen in the rest of the *Forma Urbis*. It may be equally apparent that these solutions were adopted for the sake of easy recognition--these images "look more like theaters" than do the plans of substructures called for by the general scheme of the Marble Plan. In fact,

it is interesting to observe that extremely similar approaches are sometimes taken with modern graphic representations of theaters in ancient cities, to the point even of mixing both “aerial” and substructure views (Fig. 2.35), as we saw in the Plan’s Circus Maximus image. However, the significance and rationale of these varying approaches in the Plan has not been considered.

Conceptual differences

I have foreshadowed part of this conclusion by presenting the series of examples in a certain order, as well as isolated from the architecture surrounding them on the Plan. The issues are much easier to consider this way, without extraneous data, and the presentation should demonstrate the value of careful graphic analysis: done correctly, it can make previously unsuspected points obvious. Radial lines indicating *cunei* appear only in the theaters. This is not due to any significant architectural difference from the other mass audience structures, but instead arises from the special concerns of the spectators at these structures.

Theaters presented shows with a definite frontality. The backdrops were very elaborate architectural fantasy façades, and the stage was long and relatively narrow. This meant that the middle seats provided a very much better view of the show’s action than those towards the edges, and consequently the position of the *cunei* wedge to which one’s ticket or initiative gained access was a point of particular interest to the spectator. The amphitheaters and circuses provided full-round shows, without frontality, like a modern boxing ring. In these venues the *cunei* were of little or no significance, while the *maeniana* were; access to the lower zones was the concern for best seating. Social status determined access to the several vertical divisions of seating, according to measures introduced by the first emperor Augustus.⁶⁰ Only senators were granted seats in the lowermost *ima cavea* in Rome, while women, slaves, and non-citizens sat in the *summa*

⁶⁰ Suetonius, *Augustus* 44.1

cavea, farthest up.⁶¹ A citizen who tried to secure a better seat than his status warranted could be liable to a fine if discovered.⁶² The better seats closer to the arenas were such desirable privileges that laws were passed on several occasions assigning the ranks of seating at public events rigidly according to social class (although it may be assumed that there was always room for influence and personal connections, as well as for initiative). The result was that spectators were particularly conscious of these zone divisions, and in any of the various graphic interpretations of mass audience seating these boundaries will appear, much more prominently than they did as real architectural elements.⁶³

Finally, the box seats for the presiding official at any public show are also represented with particular emphasis. The box seats were a privilege of highest social rank. At the Colosseum, for example, the two sets of box seats at either side of the arena were reserved for the emperor and the urban prefect.⁶⁴ The person responsible for funding the public entertainments of various kinds earned great notoriety and gratitude from the spectators. By the time of the Late Republic and thereafter, favor with the masses became a highly significant commodity, much courted by prominent politicians, and the provision of public entertainments was one of the chief methods by which such favor was gained.⁶⁵ By the time of the second century A.D., entertainment buildings were also long established as the sites of large-scale “social drama” interactions between the emperor and the people he ruled. With the demise of Republican voting institutions, mass gatherings became the accepted principal venue for the people to express their will and wishes to their ruler.⁶⁶

⁶¹ Scobie (1988), p. 204. For further references on this issue, see Scobie's references at his n. 85, p. 237.

⁶² As known from inscriptions from the amphitheater at Urso (Orsuna) in Spain (Pidal [1955], pp. 125,126).

⁶³ The *cavea* of the smaller amphitheaters were designed for such small audiences that these divisions were not defined; hence they did not appear in the graphic representation of the Ludus Magnus or the Ludus Dacicus.

⁶⁴ Lugli (1961), p. 23.

⁶⁵ The provision of games was seen as such an obvious bribe to the people for votes that in 63 B.C. the Senate passed a law forbidding any magistrate who held games to run for office for at least two years (Cicero, *In Vat.* 37). The emperors carefully limited competition from other magistrates by controlling the frequency and size of games they were permitted to present (see Carcopino [1968], p. 232).

⁶⁶ Even the earliest emperors were firmly expected to attend public shows for this reason; Tiberius for example earned the ill-will of the people in part due to his reluctance to present himself at the shows.

So, for important reasons, the audience would always be very conscious of the individual responsible for providing the entertainment at hand, and there would always be at least some expression of communication, such as acclamations and gestures, between this figure and the audience in the course of the event.⁶⁷ Therefore, the box seats for the presiding officials were much more than merely the most expensive seats in the house, they were an integral feature of any entertainment. This essential significance explains the particularly emphatic treatment of the box seats seen in the *Forma Urbis*.

The engravers of the Plan had without doubt attended shows at these various entertainment buildings, and in devising their own solutions to the presentation of the mass audience seating their work was affected by their experience of attending the shows. They emphasized in their graphic art those details that were conceptually important rather than visually important. This underlines the importance of reading the Plan on its own terms; without an understanding of this background, either inaccuracy or great architectural differences in these structures might be interpreted from the evidence of the Marble Plan.

Individual solutions

Another significance of this varying treatment of mass audience seating is the fact that it is evidence regarding the design, origin, and intended purpose of the Marble Plan. As has been demonstrated (above, Chapter 1), the Roman urban survey tradition possessed a standardized set of conventions appropriate to the Roman architecture that it was designed to illustrate. It is inconceivable that the representation of a theater or arena would have been considered an unusual and daunting challenge to this tradition by the end of the second century A.D. The standard rationale would dictate the illustration of the ground-floor substructures in each case, and this is what we see around the perimeter of the Circus Maximus on the Marble Plan. However, it is clear from the series of buildings just

⁶⁷ For an excellent treatment of the role, mechanics, and significance of acclamations in Roman political and social life, especially in the context of entertainment buildings, see Aldrete (1995).

reviewed that this result was considered inadequate for the Marble Plan, and that for reasons of easy recognition the alternative solutions were adopted. This reveals that the intended audience of the Plan was not specialists for whom the traditional representations would have been perfectly clear. The audience was instead perceived to need the “gloss” of the various aerial views which showed the seating surfaces and hid the substructures. These substructures were nearly always shops of various kinds let out to individual merchants; they would have had rents assessed by the state as owner of the buildings, and therefore the depiction of their specific number, arrangement, and dimensions would have been of interest for official documents. The fact that all this was dispensed with on several of the large mass audience structures on the Plan also indicates that the Plan’s purpose was not administrative.

Secondly, there is the fact that the graphic solutions to the “gloss” aerial views are so idiosyncratic. The only consistency we find is between the Ludus Magnus and the Ludus Dacicus, and that is, as we have seen, because the same individual engraved both images. This total lack of uniformity assures us that the standardized professional survey documents from which the Plan was compiled did not depict entertainment structures with aerial views. Rather, the engravers were instructed to generate aerial views based on the dimensions presented in the survey maps, and each engraver found his own solution to the challenge. This produced the resulting individuality of the depictions. This conclusion implies that the challenge of devising air views for these buildings *was a new one*. In other words, not only had the survey documents not faced this problem before, but neither, apparently, had any previous marble plan, from which the best solution would certainly have been selected as a standard treatment for the new Plan. This is additional evidence suggesting that the Marble Plan was a Severan innovation rather than an update of a previously existing *Forma Urbis*.

The consideration of temples and buildings with mass audience seating on the Marble Plan has shown that conceptual factors, in addition to architectural reality, were very important in shaping the depictions used on the Plan. With both subsets of buildings I have presented further evidence that distinguishes the *Forma Urbis* in significant ways from the tradition of Roman architectural plans. This enhanced understanding assists us not only in reading the Plan, but in properly relating it to, and distinguishing it from, standard Roman architectural plans of typical and utilitarian form and purpose.

Accuracy of the Marble Plan

Bearing in mind the foregoing considerations which inform the reading of the Marble Plan, we turn now to the issue of the Plan's dependability as a record of ancient architecture. This issue will be addressed in two phases, both of which will involve close comparisons of Plan fragments with control examples of the subjects they depicted. These comparisons will establish the degree to which the Plan may be depended upon for accuracy, and point out the aspects which tend to be more and less dependable. The first phase will be a straightforward assessment of the Plan itself; the second will take up the accuracy of the record of an important subset of lost Plan fragments which now exist only as drawings made in the Renaissance.

While the spectacular size, scope, and content of the Severan Marble Plan earn it an undisputed place of importance in the history of topographic maps and especially in the study of Roman topography, scholars who discuss the Severan Marble Plan are alternately impressed with its accuracy and disappointed with its errors. Scholars taking a broad view often marvel at its thoroughness and precision, in comparison with all other known ancient maps, indeed with any other architectural maps until after the Renaissance.⁶⁸

⁶⁸ Dilke (1985), p. 106, is only willing to say that in spite of occasional scale errors and discrepancies with archaeological data, the Plan "can nevertheless be claimed as the most accurate plan of Rome until that of G.B. Nolli in 1748." This is not much of a claim since there is no real competition for topographic plans of Rome in the time until Nolli's map. The Rome city maps of the intervening period

Harvey, for example, offers the assessment that “this is one of the most impressive of all early achievements of topographical mapping...sometimes the carving departs from [the guidelines], and a few corrections to the carving can be found, but on the whole the plan seems to have been both marked out and carved with great care and accuracy.”⁶⁹ He goes on to call the Plan “the most impressive monument we have of the work of Roman surveyors...it is remarkable in both in the sophistication of its cartography and in its general accuracy.”⁷⁰ However, for Richardson, a Roman topographer, its “execution is careless and inaccurate in detail, with occasional serious errors in surveying.”⁷¹ It is “not meticulously drawn” and “rather clumsily and inaccurately executed.”⁷²

These contradictory assessments arise from different points of view. It is important to appreciate the remarkable sophistication and accuracy of the Plan when considered in a broad context, but it is also reasonable that a Roman topographer should be concerned with the dependability of the *Forma Urbis* for reconstructive and interpretive work. Without intimate familiarity with the Plan, it can be difficult for an infrequent user of this document to assess the dependability of data gleaned from it. The present section addresses this issue, and provides a guide to the accuracy of the Marble Plan. Several comparisons are made between architecture known both on the Plan and from actual remains; the range of fidelity in these comparisons demonstrates the degree to which the Plan is faithful to the real architecture, and what kinds of errors may be expected. As an introduction, I present a summary of the classes of error found on the Plan. In the process of the comparisons I explain the causes of some of these errors. In conclusion, I assess the accuracy of the Marble Plan, and discuss the implications of the level of accuracy that we find in this document.

are all of the illustrative picture variety, and the plans are of individual buildings or areas of limited extent. This information at least serves to set the Plan apart with appropriate distinction.

⁶⁹ Harvey (1980), pp. 127 and 128.

⁷⁰ Harvey (1980), captions to figures 73 and 74.

⁷¹ Richardson (1992), p. xix.

⁷² Richardson (1992), p. 287, xvii.

Classes of Errors on the Plan

This section groups errors found on the Marble Plan into classes. While these may be fairly obvious, it will be helpful to organize the types of errors so that they may be discussed and assessed distinctly rather than approached as an amorphous mass. The various errors arise from different causes, and this is easier to investigate and discuss when they are separated. Also, different kinds of errors have different implications, for topographers and for the study of the Plan and Roman mapping.

Abbreviation

Abbreviation is the shortening of a sequence of units, allowing a smaller number of them to stand for the larger whole that is represented. Rows of columns or pilasters are an example of unit sequences subject to abbreviation on the Plan. Flights of stairs are often abbreviated with a symbolic few parallel lines rather than defined with the exact number corresponding to the actual steps; we have already encountered a similar phenomenon with the seats in the Colosseum. Apart from cases of obvious asymmetry (in flanking rows of columns for example), this error can be difficult or impossible to detect without independent evidence or strong presupposition. Shortening a sequence of identical units would be an easy way for an engraver to hide the fact that he had not left enough room for the entire sequence, and this is probably the origin of many abbreviation errors such as in column rows. The intentional abbreviation of steps or seats in many cases seems, on the other hand, to have been part of the general scheme of the Plan. Abbreviation would cause reconstructions mistaken in detail, but in general pose no serious obstacle to topographic interpretation.

Omission

The omission of architectural features or details (such as colonnades or rooflines) was probably intentional in many cases on the part of the Plan engravers. Omission reduced

the engraving workload and also contributed to the overall clarity of the Plan, which was already a dense mass of detail and probably hard to make out as it was. The Plan was abstracted and simplified from accurate survey documents in a manner much less standardized than the conventions of the survey documents themselves (as we have seen with entertainment buildings, for example), and it apparently was not always clear which details it was appropriate to preserve and which to dispense with. Consequently omission is an irregular practice. Features omitted in one area (especially rooflines, for example) may be carefully depicted in another. Some omission certainly occurred in error, due to oversight or confusion on the part of the engraver copyists, including (for example) the accidental sealing of doorways when a guideline was followed with deep engraving and the appropriate gap of a doorway was missed (Fig. 2.36). This irregularity from multiple origins complicates our study of the Plan topography, as it introduces some basic uncertainties. Arguments based on the absence of features (such as entrances) may be unsound if the omission of those details was erroneous rather than a depiction of reality. It complicates reconstructions in ways that can be significant, if entire colonnades are omitted, but can sometimes be detected when common sense and familiarity with Roman building types set up a strong expectation that the feature existed in the actual building (such as seats in theaters, or approach steps at the front of a temple).

Distortion (compression or exaggeration)

The proportions of rooms or buildings may be “squashed” or “stretched” in some cases, preserving the relationship of the features but not their true scale and relative measurements. This can only be detected with complete confidence in cases where independent evidence is available. It probably arises in most cases due to the efforts of copyists to reconcile the multiple sheets and survey sectors that individually made up the body of information that was collated on the plan. Compression or exaggeration is not a readily apparent error, and could hide the fact that the data were being altered to

accommodate survey discrepancies. Distortion is known to occur even in small buildings of simple rectangular plan (like temples); it is certain that these were originally surveyed with a high degree of accuracy, and we may ascribe their distortion to the engraver copyists alone. The potential for distortion errors renders impossible the confident study of architectural proportions from the Plan, which could be of interest as they are known to have been, in some cases, deliberate design features composed by Roman architects according to various classical standards. Apart from this lost nuance, the study of an individual building's distortion does not severely complicate architectural or topographic analysis.

Distortion could also occur cumulatively over a particular area that was altered to fit better with the surveyed plan of another nearby; meaning that we cannot always be sure of the precise location of an unknown topographic feature just by superimposing a known element on a modern plan showing its extant remains. This practice can certainly offer great assistance and is not likely to be grossly incorrect, but such endeavors must be undertaken only with an understanding of the nature of the Plan.

Misplacement

Apart from the use of independent evidence, misplacement of detail features may sometimes be detected in cases of obvious asymmetry, and should be ascribed to confusion or oversight on the part of the engraver copyist. That this did occur at times is certain; however, it should not be expected except in the cases of minor details (Fig. 2.37). When not apparent, misplacement is unfortunately a part of the noise that interferes with the clarity of signal of the Plan as representation of real architecture. It is a sign of engraver sloppiness, and does not appear to be very common.

Discrepancy

The outright misrepresentation of the actual architectural structure being depicted is the most frustrating and serious class of error on the Plan. Instances of discrepancy have probably contributed to some reluctance to employ the Plan in topographic studies; misinformation is worse than no information. Examples of discrepancy are seen in the Temple of Castor in the Roman Forum (fr. 18bc, Fig. 2.38): the approach stairs appear in a configuration that cannot be reconciled with the known remains. The Plan shows a small platform in the center of the stairs, of a type not unusual in Roman temples, which offered a platform for speaking or sacrifice in full view of an audience. The Temple of Castor possessed such a platform, but the actual one ran the entire length of the frontal steps and was reached by flanking stairs (perpendicular to the main ones) at either end of the platform. As fr. 18c is preserved, the error cannot be ascribed to the Renaissance copyist (on whom we depend for fr. 18b). This is instead a serious discrepancy on the Plan. Without the archaeological evidence, we would have great difficulty reconciling this representation with the frontal platform's status as one of the three Rostra listed in the fourth-century Reginary catalogues. A Rostra (speaker's platform) customarily presents a long face on which the original eponymous platform bore the bronze beaks (*rostra*) of defeated enemy naval vessels.⁷³ The Temple of Castor was one of the most prominent in the Roman Forum, the very heart of Rome, and it is hard to understand how such an error as we find here could have occurred. In this same area are other discrepancies, around the Lacus Juturnae shrine near the Castor temple to the southeast. Here the single altar of the shrine is doubled, as are the stairs leading to the altar. We must presume that a copyist engraver of lesser talent handled this area, and was perhaps confused as he sought to reconcile survey misalignments (which also caused the skewing of the walls of the

⁷³ After a victory over the Latins at Antium in 338 B.C., trophy ship's beaks were first attached to a speaker's platform in the Roman Forum (Pliny, *NH* 34.20; Livy 8.14.12). The decoration of later speakers' platforms with rostra became customary.

tabernae behind the Castor temple). Known examples of outright discrepancies are very rare, but it must be held in mind that they do occur; consequently when the Plan is confronted with conflicting evidence from other sources, its occasional fallibility must be considered.

Skewing

Anyone who has dealt in the field with the problems of erroneous land survey documents is familiar with the problem of reconciling independently-surveyed sectors. In the face of data that simply do not match, and without time to solve the problem correctly by re-surveying, a compromise solution must be reached that accommodates both sectors. This apparently occurred in the Plan as copyists endeavored to collate smoothly separate sheets of survey maps, and to place on a continuous document the data from separately-surveyed sectors.⁷⁴ One result of the accommodation of misalignments in the data was the localized skewing of some axes. This is a more probable explanation for some puzzling sections of the Plan than the conclusion that some architecture in Rome was itself as skewed as the Plan would assert.

A prime example of this phenomenon is a block appearing on fr. 10g (Fig. 2.39). The authors of *PM* were struck by this topography, and expressed surprise but considered that the ancient sources do attest to parts of Rome having been a rat's nest of narrow winding alleys without rhyme or reason. They also observed that possibly the engraver accentuated the distortion to "correct errors due to ground relief" and this seems most probable.⁷⁵ The evidence is in the non-orthogonal alignments of the walls inside this problematic block. While urban blocks and spaces were often irregular in shape, the Romans had a strong architectural preference for orthogonal alignment of their architecture, and this was usually expressed in spite of difficult perimeters. Examples of this can be seen elsewhere in cases where the perimeter is angled but the internal walls are

⁷⁴ See *FUM*, Ch. 5.

⁷⁵ Cozza, *PM*, p. 67.

nonetheless perpendicular to each other. It is overwhelmingly likely that they were at least nearly perpendicular in the problematic block of fr. 10g as well, and that the distortion we see is an error of the Plan. Considering this, the failure of the Plan in some spots to correspond with known archaeology solely in the aspect of wall alignment must be understood as a kind of distortion error rather than an outright discrepancy.

This becomes important, for example, in the case of fr. 18a, where the alignment of the internal walls of the *tabernae* behind the temple of Castor (angled rather than perpendicular to their façade) has been taken as evidence that the fragment does not represent the Domitianic *tabernae* known archaeologically, and that therefore the fragment does not belong to the Severan Marble Plan. In perspective we can see that it is much more likely that the difference is merely a skewing error, especially given that the façade of the *tabernae* does correspond to the Domitianic building.

Misorientation

Misorientation of buildings or even sectors arose from the great difficulty of surveying the hilly and irregular ancient city of Rome without the benefit of optical technology or the magnetic compass.⁷⁶ In review it is rather amazing that the survey was, overall, as accurate as it was. In most of the Plan, misalignment of structures is very modest. However, some greater errors do occur, in which the structure is more or less faithfully represented, but in an incorrect orientation, as if rotated on its center. In misalignment we can also see the same problem of sector reconciliation that resulted in skewing errors, only handled in such a way that the integrity of an individual building was preserved at the expense of its alignment. Another cause of misalignment, also identified by Rodríguez-Almeida, was the practical consideration of making long lines not cross the slab borders at shallow angles.⁷⁷ This, for example, accounts for the shifting of the axis of the Circus

⁷⁶ As cited in Chapter 2, Rodríguez-Almeida has studied the survey problems in the Plan (*FUM*, pp. 44-53).

⁷⁷ *ibid.*

Maximus, which was rotated so that it would align parallel to vertical slab edges (Fig. 2.40). The most pronounced misalignment error is that of the Temple of Divine Claudius. This lost temple sat on a massive platform which is archaeologically known, just south of the Colosseum. The Plan represents this platform 21 degrees off of its actual alignment. This is a singularly bad misalignment, from which Rodríguez-Almeida concludes that several survey sectors must have met in this area, resulting in an accumulation of alignment problems.⁷⁸ Fortunately it is not at all characteristic, and most misalignments are from four to six degrees. For the reader of the Plan, it should be kept in mind that exact alignment is not one of the primary strengths of the Plan, and that here again, independent sources of evidence should be given more weight in cases of conflict. Any efforts to superimpose the Plan on modern survey maps should take this potential misalignment factor into account with an understanding of the nature of the Plan in mind.

Plan depictions compared with archaeological remains

Although it would be desirable to compare a variety of building types to their depictions on the Plan, this comparison is confined to major monuments by their durability and enduring interest as subjects of excavation. Nonetheless, the following series should provide a clear understanding of the degree of accuracy that can be expected from the Marble Plan.

Ludus Magnus

We have already encountered this amphitheater in the discussion of entertainment buildings. For the Ludus Magnus the Plan is quite accurate in the aspects which can be checked (Fig. 2.41). One can see the access passages or *fauces* around the box seats (on the long sides of the seating oval), the fairly accurate proportions of the *cavea*, and of the lodging and storage rooms behind the portico surrounding the arena. The triangular

⁷⁸ *FUM*, pp. 48-53.

shapes appearing in the corners of the portico are shown by excavation to be fountain basins, accurately represented. The internal divisions underneath the seating of the *cavea* are not shown, but a door in one end is. This is the ambivalence of *cavea* representation (as we have seen), not an inaccuracy.

The overall proportions of the structure cannot be checked for accurate representation due to the incomplete fragments of the Plan, and the correct number of columns cannot be checked due to the incomplete archaeological remains. The staircase in the upper left hand corner of the excavated building is not seen in the depiction, but the Ludus was modified several times over the centuries and this is very possibly a later addition. Overall, the engraved image of the Ludus Magnus attests a high degree of accuracy for the Plan.

Circus Maximus

Comparatively little of the gigantic Circus Maximus is known archaeologically, but the explored remains correspond favorably with the evidence from the Marble Plan (Fig. 2.42). The best-preserved part of the Circus, in both cases, is the “hemicycle” or sphendone of the Circus, the curved part of the U of seating surrounding three sides of the arena. Among the aspects that offer direct comparison is the entrance into the arena that pierced the middle of the sphendone. Through this entrance would have come the processions and parades that made the Circus games such a spectacle. The Marble Plan shows this entrance leading through three long barrel vaults. These are depicted with the peculiar but consistent symbol for arch constructions employed on the Plan: the arch piers (in this case long walls) are shown in outline, and these are then connected at their ends with curved lined deflected towards the inside of the arch. With this standard convention in mind, the depiction on the Plan reads very clearly (and also shows that doorways or windows pierced the two internal walls of this series of barrel vaults). The excavated remains appear to correspond with this triple-channeled entrance, as well as with its proportions in relation to the sphendone curve.

I have already discussed the Plan's depiction of the seating at the Circus Maximus; the Plan shows the lower, inner two ranks of seating in a sort of aerial view. For the outer half of the *cavea*, the Plan's standard scheme of ground-floor plan was employed, and here we can compare the Plan image to excavated remains, in the east half of the hemicycle. Stairs are shown in the fourth, seventh, and tenth rooms counting away from the entrance passage, and these are in each case confirmed by archaeological remains, which also attest that there were no stairs in the other rooms shown. The remains also show some traces of the outermost ring of archways shown by the Plan leading into the portico ringing the sphenone.

In this part of the Circus Maximus the Plan appears to be quite faithful, which is particularly interesting since the exact placement of these internal staircases is not the kind of detail that a viewer of the Plan would have been likely to check. It suggests very accurate source plans.

Temple of Minerva in the Forum Transitorium

The remains of this temple in Domitian's Forum Transitorium were pulled down in 1606 by Pope Paul V.⁷⁹ Consequently there is little hard archaeological evidence with which to compare the Plan. However, it is an interesting case, as significant error in its depiction can be detected nonetheless.

The cella of this temple is engraved on the Plan as an oddly asymmetrical chamber (Fig. 2.43). The creation of the Forum Transitorium out of the alley that had been part of the Argiletum posed many architectural challenges for Domitian, such as necessarily off-axis entrances at both ends and the intruding mass of the southeast hemicycle of the Forum of Augustus. But the design created for the Forum Transitorium carefully masked these problems with devices such as screen walls and the Porticus Absidata, all concealing or minimizing the visual impact of the off-axis elements. Great deliberation went into this

⁷⁹ Richardson (1992), p. 168.

elegant plan, and it is therefore all the more unlikely, indeed inconceivable, that the cella of the temple built specifically for this forum could have been in reality so egregiously asymmetrical.

One must conclude that the Plan depiction is in error here. This is all the more surprising considering the fact that this was no remote or obscure building, but rather one that was most likely passed by every Plan engraver on his way to work each morning; entrances to the *Templum Pacis* opened off of this Forum. The temple stood only a minute's walk from the mounting wall of the *Forma Urbis* where the engraving was actually carried out. The building was familiar and prominent, and the only explanation for the error in its depiction must be carelessness or oversight. It is interesting to see this error in an important monument at the heart of the city center, as it shows that prominent features of famous monuments were not necessarily given more scrupulously accurate treatment than anonymous buildings or minor architecture, as one might have imagined (cf. the obscure but accurate stairwells in the *Circus Maximus*). We should instead suppose that the original survey sheets were carried out at a high degree of accuracy, and that errors occurred in the transcription of these without regard to the importance of the building represented. This means that a poor building is probably no more likely to have an error than a splendid one, and that the depictions of low-class architecture can be trusted more than we might have expected.

Temple A in the Area Sacra di Largo Argentina

The *Area Sacra di Largo Argentina* was on the route leading away from the *Circus Flaminius*, a path traveled by the ceremonial triumph parades of victorious Roman generals. A line of temples here are presumably the dedicatory offerings of honored generals, dating back to the third century B.C. Four temples have been explored, and more probably remain hidden under the modern pavement. The oldest of the visible temples is referred to as "Temple A," as its dedication is unknown. This temple appears

clearly on the Plan and allows for comparison with the remains (Fig. 2.44). The temple was hexastyle and is represented as such on the Plan. However, the line of columns on the side is known to have numbered nine, where the Plan shows only seven. This is an example of an error of abbreviation. We will also see this type of error in the Renaissance drawings; both the Roman engravers (acting as copyists of original survey plans) and the later Renaissance copyists sometimes made the same kind of mistake. The approach stairs are correctly shown as flanked by balustrades. The steps within this flight of stairs (including the podium as the top step) are abbreviated to three from an actual ten. This is not likely an engraver's error, but an intentional simplification for economy of effort. The temple podium as excavated has the proportions 4:7, while the Plan illustration shows proportions of 4:6. This compression of the length explains the absence of two columns. Such an error is probably due to a careful form of the sector reconciliation identified by Rodríguez-Almeida.

Temple of Juno Regina in the Porticus Octaviae

The temple of Juno Regina in the Porticus Octaviae (fr. 31aa-bb) is known sufficiently from excavation that a meaningful comparison may be made with its nearly complete representation on the Marble Plan (Fig. 2.45). The Plan's illustration here shows some confusion on the part of the engraver. Lines defining (or at least suggesting) the steps of the approach stair are omitted. This is very uncommon, and occurs only in three other temple depictions (frs. 31bb, 22, and 31a-c.2). The stairs did exist nevertheless, and it is a variance from Plan standards that lines representing them are omitted.⁸⁰ The approach stairs were flanked by balustrade side walls projecting from the podium, as was common for Roman temples; however these side walls are entirely missing from the Plan depiction. Also excised from the drawing, along with the balustrade walls, are the corner columns that made this temple hexastyle. A total of three columns lined the sides of the pronaos,

⁸⁰ Omission of this type also occurs irregularly with the seats in theater and circus *caveae* as has been discussed above, "Entertainment buildings on the Marble Plan."

but the Plan only shows one along with the missing spot for the corner column, an abbreviation inaccuracy that is of standard class and easier to understand than the omission of the balustrade walls.

Further confusion is seen in the misplacement of the side column on the east side of the temple, which is displaced towards the interior of the temple porch rather than attached to the podium edge line as it should be. This is asymmetrical and incorrect. The shape inside the temple cella is not an error for a closed rectangle representing a statue base, but rather an accurate representation of an aedicula within the cella attested by the drawings of Piranesi.⁸¹ The length of the temple is almost perfectly accurate at the 1:240 standard Plan scale, while the width has been exaggerated from 59 ft. (18 m) to a scale 69 ft. (21 m) in the depiction. This recalls the distortion seen in the Temple A in the Area Sacra di Largo Argentina, and is probably also due to the engraver trying to hide survey discrepancies by manipulating the data.

Several of the odd inaccuracies of this example would be easily detected as such by a researcher familiar with Roman temple structure. However, it shows that the Plan does make errors that seem due to nothing more than carelessness or confusion, and it is apparent again here that a prominent structure appears to merit no extra care on the part of the engraver. An example such as this suggests that where the Plan is opposed to a firm common-sense expectation, it is probably the Plan that is inaccurate. At the same time it is clear that the Plan's inaccuracy tends to occur within boundaries; instead of brazen discrepancy what is usually encountered is some form of minor copyist error.

Accuracy of the Marble Plan: Conclusions

While this section has mostly focused on the specific failings of the Marble Plan, it should be clear that the level of error is much smaller than might have been imagined for such an extensive survey in an architecturally dense and topographically difficult city,

⁸¹ Richardson (1992), p. 217.

without the benefit of modern technology. The fact that this level of care and accuracy was maintained for a monument that did not serve an official record-keeping purpose (as will be explained below) is all the more impressive. Other sources from antiquity, such as the literature of historians and satirists, are filled with challenges for the modern scholar, errors and misrepresentations which can only be overcome through a sympathetic understanding of the nature of the source and the channels through which it has been transmitted. Similarly, notwithstanding its errors the Plan is still immensely useful, and indeed, compared to the distortions and fabrications necessarily present in the works of even reputable ancient historians, the inaccuracies of the Marble Plan seem rather trivial.

The high level of accuracy found in the Marble Plan attests to a remarkably well-developed technical standard in the urban survey tradition of the *mensores aedificiorum*. It is also clear that while an extraordinary amount of effort was clearly expended in the accurate gathering of this information, its transcription into the wall-mounted slabs of the Marble Plan was carried out to a lesser standard such that errors even in major monuments were not considered serious enough to warrant slab replacement or elaborate correction. The distribution of accuracy and error on the Plan suggest that all the architecture it represents was treated equally, without prominent monuments receiving preferential treatment over minor architecture. This is encouraging for the student of the Plan in that if the reverse were true, much of the anonymous architecture on the Plan would have to be regarded as of very dubious accuracy in comparison with the famous monuments. And it is the Plan alone that offers data on so much of this structure of ancient Rome. Lost to archaeology through its “unimportance,” and described in only general terms in the literary sources, much anonymous architecture survives for study uniquely in the Marble Plan. As we endeavor to understand more of the non-elite and historically underrepresented aspects of ancient Rome, it is perhaps from the examination of these back streets and practical structures hidden away from the magnificent monuments of urban display that many of the Plan’s future contributions will come.

Accuracy of the Renaissance Drawings

When considering the reliability of the Plan, one must be sure to consider what part or version of the Plan is in question.⁸² Twenty-nine fragments, and portions of 30 more, now exist only as drawings made during the Renaissance, the original pieces having been lost since their discovery in 1562, most of them between 1600 and 1673, when several hundred of the less impressive fragments were discarded and built into the Farnese “Giardino Segreto” on the Via Giulia. Other fragments have vanished later with less explanation, even after they were presented to the Vatican in 1742.⁸³ Many from the Farnese construction have been recovered, but a number of significant pieces remain known only from the Renaissance drawings.

The principal body of drawings of Plan fragments is collected in Vatican Latin codex 3439, also known as the *Codex Orsinianus*. The origin of the drawings is unknown.⁸⁴ 91 different fragments are illustrated, only a sample of those known at the time.

Carettoni noted that “the careful examination of one of the larger fragments (fo 14r no. 1) is sufficient to confirm that, notwithstanding the differences in small details of secondary importance (indications of doorways missing, other details omitted or badly copied), the principal lines and the proportions of the piece are seen to be exactly reproduced.”⁸⁵ This is perfectly correct, but as topographers are often interested in the details, I will shortly turn to a close analysis of the drawings, comparing them to some of

⁸² Jordan (1874), sec. 4, first considered this topic in rigorous fashion, another example of the completeness of his excellent work on the Plan. The Renaissance drawings are individually discussed by Carettoni in *PM*, pp. 43-52. *PM* also includes plates or text-figures of all the relevant early drawings. Here we undertake a review of these works for the express purpose of evaluating the accuracy of those on which we must depend, and with a tabulation of published observations, independently confirmed by recent observation (Nov. 1994).

⁸³ The fortunes of the Plan fragments are thoroughly chronicled by Colini in the first chapter of *PM*, pp. 25-31.

⁸⁴ Carettoni lists some of the speculations in *PM*, p. 50; Anderson (1984), n. 66 discusses the topic also.

⁸⁵ *PM*, p. 50. This sentiment is closely echoed by Rickman (1971), p. 100, who performed a similar comparison.

the fragments that survive in order to judge exactly how accurate the drawings represent the architecture depicted on the Plan.⁸⁶

As Jordan observed, followed by Caretoni, the drawings from V. L. 3439 can be attributed without difficulty to two different hands.⁸⁷ Here I will distinguish the two, for the purpose of examining separately their individual levels of accuracy in copying the Plan engravings. A table of the different traits seen in each makes attribution secure (Fig. 46). Open columns, 'squarish' letters, and free-hand traits consistently correlate together, and form the identifying features of the work of the first artist, "A." The alternatives to these traits, solid columns, 'painterly' letters, and reliance on a ruler also consistently correlate together, and this work can be called that of artist "B." There is no reason to suppose that any of the drawings are the work of someone other than these two artists since the traits correlate so well. The red outline is a curious feature that would seem to be a trait of artist A, except for its appearance in fo 17 r and v, which contain the work of B. It is possible that these are the additions of a later hand, perhaps an early effort to distinguish the work of the two artists.

Comparison of Vatican drawings with known fragments

A representative sample of eight drawings from each of the two Renaissance artists of the Plan drawings in Vatican Latin codex 3439 are presented here (always at left, all drawn from *PM*) with their counterpart surviving fragments shown at comparable sizes (always at right, all drawn from *FUM*) for ease of comparison (see pls. 1-10). The accompanying commentary will serve to demonstrate clearly the degree of accuracy that can be expected from the Renaissance drawings for the 61 cases in which some or all of the original

⁸⁶ For the authors of *PM*, such an analysis in this form was not necessary; Caretoni comments in general fashion on each of the individual drawings, and as for their accuracy the familiarity of the authors of *PM* with both the drawings and the fragments doubtless made it clear to them exactly how they should regard the information from the drawings. The intention here is to provide a concrete demonstration (for those perhaps not so deeply immersed in the study of the Plan) of what these topographers would have concluded through their familiarity. This study is meant to serve as a guide and reference for researchers who would consult the drawings.

⁸⁷ Jordan (1874); Caretoni in *PM*, p. 43-52.

fragment depicted in a drawing is now lost. Only the errors are pointed out here. In most respects the drawings of both artists are perhaps surprisingly faithful to the originals.⁸⁸

The drawings are identified by folio page (*recto* or *verso*) and illustration number, following the notation used in Carettoni in *PM*.⁸⁹

Selected comparisons between drawings and preserved fragments for V. L. 3439 artist A
(see figures 2.47-50)

1. Fo 13r n.3, Ludus Magnus (fr. 6bcd)

The drawing abbreviates columns on the left side, showing ten for twelve. It straightens the uneven lines of columns and regularizes their spacing.

2. Fo 13r n.2, Serapeum (fr. 35mu)

This drawing is quite faithful, but does straighten crooked files of columns.

3. Fo 13r n.1, Two Unidentified Temples⁹⁰ (fr. 672abcd)

This comparison illustrates the drawings' typical miniaturization of inscriptions, in an otherwise faithful depiction of the original fragment.

4. Fo 14r n.3, Aedes "Minerbae" (fr. 22bc)

Again we see the marked reduction in size of the inscription in the drawing. This drawing also straightens the column file at the front of the temple, and omits part of the lines defining the sides of the temple's approach steps. The artist's efforts to regularize the original image introduced some distortion in room proportions.

⁸⁸ The Renaissance drawing are taken from *PM*, pls. 1-XIV. The complementary fragment drawings are those provided by Rodríguez-Almeida in *FUM*.

⁸⁹ Carettoni, *PM*, p. 43-52.

⁹⁰ Coarelli (1977) has proposed that they may be the temples of Dis and Proserpina.

5. Fo 19r n.9, Aedes Castoris (fr. 18bc)

This drawing erroneously depicts the façade columns of the temple engraving as “attached” to the front line of the podium, rather than “floating” unconnected to any other line. This is an example of the drawings’ tendency to obscure details of “hand” in the original engravings. The drawing also shows the common error of abbreviation, in the pilasters of the Basilica Julia, showing five for the engraving’s six, and eight for its nine in the two inner files of columns aligned with the side of the Castor Temple.

6. Fo 20r n.1, Vicus Summi Choragi (fr. 3ab)

The drawing here endeavors to make the architecture shown in the engraving more orthogonal. Some of these kinds of “corrections” seen in the drawings may happen to be more true to the original architecture than the sometimes distorted engravings; however, these “corrections” are only carried out according to the artists’ notions rather than evidence or archaeological discipline, and one should consider them, but warily.

Abbreviation is also seen here again, with five columns shown for six.

7. Fo 22r n.4, Macellum (fr. 157c)

Besides the almost obligatory diminishing of the size of the inscription, this drawing shows that the Renaissance artists not only did omit minor details but also at times invented them. Here sixteen columns are shown for the engraving’s fourteen.

8. Fo 22r n.17, Curiae Veteres (fr. 452d)

The drawing here has “corrected” the original engraving to the point of shifting the inscription off the architecture on which it overlaps (a rare occurrence on the Plan). As in the previous example, we see here again the addition of invented details, with three

columns shown for two and nine for seven. The column row is also straightened in the drawing.

Fidelity of V.L. 3439 artist A

On the whole, Artist A is quite faithful to the original fragments. Errors are of detail, typically the abbreviation of columns in files (where A omits one or two), or the alteration of fine features, which, however, can obscure the “hand” of the original engraver. Artist A also adds extra invented columns occasionally. Inscriptions are drawn significantly smaller than they appear in the original engravings, and in general Artist A tries to “correct” irregularities of the engraving by such expedients as straightening lines and squaring angles.

Selected comparisons between drawings and preserved fragments for V. L. 3439 artist B
(see figures 2.51-56)

1. Fo 13v n.1, Via Portuense (Trastevere) (fr. 28bc)

Like Artist A, B endeavors to regularize and “correct” in his drawings. Here this practice results in both omission and addition of columns (five for six and seven for six). B also tends to close off or open up apparent entrances erroneously. Here an erroneous rear door is drawn in for the traditional atrium house. B chose larger fragments, more ambitious projects for drawings than did A, and perhaps a resulting oversight explains the complete omission of a substructure shown in the original fragment.

2. Fo 15r n.1, Porticus Aemilia and “Galbana Complex” (fr. 24ac)

Here Artist B has blocked an entrance shown on the fragment. The drawing omits the cross-lines in one of the staircase symbols, an example of the kind of detail

alteration that can obscure the “hand” of an original engraver. The aisle space in the Porticus Aemilia is almost lost in the drawing. The entrance to an enclosed file of facing rooms is altered in a way which masks its distinction from a neighboring structure. Otherwise the drawing of all this detail is remarkably faithful.

3. Fo 15r n.2, Horrea Lolliana (fr. 25ab)

Here the rather uneven column files of the original engraving are somewhat straightened, and the (diminished) inscription is shifted so as not to overlap the architecture as it does on the fragment. Columns are both abbreviated and invented, eight for nine, three for four, and twelve for eleven. All these changes are the product of the artist’s efforts to “correct” and neaten the depiction. We also see again Artist B’s tendency to invent entrances not present on the engraving, and here an additional room is added to one file of them. A staircase is omitted.

4. Fo 23r n.3, Theatrum Pompei (fr. 38bcdef)

This comparison shows how much of this fragment of special interest is lost. A significant point of observation here is that B alters squares to dotted squares, which would ordinarily be an important indicator of “hand” in the original engraving. Small lines are omitted, and an extra dotted square is invented.

5. Fo 15v n.2, Temples A and B in the Area Sacra di Largo Argentina (fr. 37a)

This comparison presents a second case of Artist B altering squares to dotted squares, obscuring possible “hand” attributions of the original engraving. An invented column is added to the side of Temple A (eight shown for seven), and detail is invented for the series of niches behind the temples. An irregular column file is somewhat regularized. B’s tendency to alter or invent minor features is marked.

6. Fo 15v n.4, Temples C and D in the Area Sacra di Largo Argentina (fr. 31h)

Here Artist B has altered a straight line defining the edge of a mass in the temple steps to a curved line. More significantly, the drawing omits the temple podium edge lines, a key feature of the suite of special temple conventions (as we have seen above).

7. Fo 15v n.6, Aedes Minervae in the Forum Transitorium (fr. 16a)

This offers yet a third instance of Artist B's tendency to alter squares to dotted squares. This drawing on its own (without the actual fragment for reference) would have provided very confusing data, as the "dotted square engraver" is normally very precise and would not have been thought to execute such a sloppy and asymmetrical depiction as this. The drawing's efforts to regularize or "correct" the depiction hides that fact that its irregularities stem from sloppiness rather than unusual architecture. A step is omitted from the front of the temple.

8. Fo 18r n.2, Adonaea (fr. 46a-e)

This drawing is unusual in that it preserves the irregularity seen in the files of dots on the fragment. It also preserves the aisle spacing distinctions between these files, a feature often lost in the drawings. A significant omission, however, is the rectangular structure (presumably a pool) at the center of the enclosure.

Fidelity of V. L. 3439 artist B

Possibly because Artist B drew so much more architecture than did Artist A, we see in B's work quite a number of omissions and inventions. Any multiple feature, whether columns or rooms, may be increased or decreased by one or two units. Detail features such as staircases are subject to omission, while entrances commonly appear and disappear with Artist B. Like A, B endeavors to regularize the uneven lines and angles seen in the Plan engravings, altering room proportions and column numbers in this

process at times, or even inventing additional detail. B also has a tendency to obscure traces of “hand” in the engraving by altering such details in the drawing, a particular example being B’s habit of altering squares to dotted squares.

Overall Fidelity of the Renaissance Drawings

This close look at the fidelity of the drawings from V. L. 3439 shows that overall they are indeed remarkably faithful to the originals, obviously the products of careful observation and effort to depict the Plan engraving authentically. However, both artists display a tendency to abbreviate or (less often) invent repetitive detail, and to alter subtle details. Entrances are subject to omission and invention, especially by Artist B. Both artists shrink and shift inscriptions in favor of the architectural illustration.

This realization of accuracy means that for the study of lost fragments, these Renaissance drawings may be relied upon with confidence for general architectural plans. When it comes to details, however, they should not be trusted, and no argument should be built on fine details from these drawings, whether they bear on attribution of “hand” or on architectural analysis. Pedestrian traffic flow through buildings, for instance, would be very difficult to study in any of the drawings, given that entrances are so often altered.

The foregoing demonstration of the slight differences in the characteristic errors of each of the two artists of these drawings may help researchers working with lost fragments to judge with greater confidence what features of illustrations in question are likely to be accurate or inaccurate.

We are very fortunate to have this collection of drawings, preserving so much information from the Plan that would otherwise be unrecoverable, and we are additionally fortunate that the copies were carried out with such care. The standard of accuracy is certainly as high as one could hope for, considering the context and the time of their creation.

Purpose of the Plan

The foregoing close examination of several aspects of the Marble Plan places us in a better position to take up some of the more general questions posed at the beginning of this chapter. The analysis of these questions will continue to rely on the previous chapter's discussion of the other Roman architectural plans, from which (it is now more clear than ever before) the *Forma Urbis* must be distinguished in important ways. Separating the monument from the tradition allows us to assess the work of the urban surveyors without trying to accommodate the great anomaly that the *Forma Urbis* presents if forced into that context. This distinction also allows the specific nature of the *Forma Urbis* to be approached with a clear understanding of the ways in which it differed from the architectural survey map tradition. This will be helpful as we turn now to the question of the purpose of the Severan Marble Plan.

The purpose of the *Forma Urbis* has been a point of curiosity with many commentators, and a range of proposals has been offered in attempts to explain the existence of this extraordinary map. No direct evidence from antiquity bears on the subject: there are no other comparable artifacts of such magnitude, and there is no mention of the *Forma Urbis* itself in any inscriptions or preserved ancient literature. The function of the hall of the Templum Pacis in which the Plan was placed is a matter of some conjecture as well, so its context offers limited assistance. A satisfactory hypothesis regarding the purpose of the Plan must explain its idiosyncrasies and its enigmatic aspects. First, given the overall high degree of surveying accuracy seen in the Plan, why are there egregious errors of detail, even in prominent public monuments like the Temple of Minerva or that of the Divine Claudius?⁹¹ That is to say, why was the extremely difficult survey accomplished with such diligence, only to be recorded in such a haphazard fashion? Second, why, on this gigantic, detailed Plan, is so little architecture identified?

⁹¹ Survey accuracy was established by Gatti in *PM*, pp. 238-31; as discussed above.

While public buildings and spaces are annotated with inscriptions, thousands of private buildings are depicted in detail and yet left anonymous.⁹² Further, as it omits private property identification, the Plan also lacks the measurement notations seen in most other Roman stone plans.⁹³ These recorded measurements supported the legal recognition of tax obligations or land rights; however, no measurements at all appear on the Plan. What explains this departure from the normal tradition of precise and useful maps? Finally, important general questions hang on a sufficient explanation of the Plan's purpose as well. Why was this map executed at such a colossal and absolutely unwieldy scale (standing over 40 feet high and 60 feet wide), which rendered it inaccessible for consultation and mostly unreadable? What made its location appropriate, and why should it have been created between the years A.D. 203 and 211?⁹⁴ A consideration of all the traits of the Plan makes an explanation of every one of these questions possible. Building upon the detailed graphic analysis in this chapter, and on the treatment of other Roman architectural maps in the previous chapter, I will show how the evidence supports one conclusion to the exclusion of all others. To begin, I will review the propositions that have been made in commentary on the Plan.

Theory of cadastral purpose

The most commonly accepted explanation would interpret the Plan as serving a utilitarian purpose in support of the office of the urban prefect.⁹⁵ The Plan is even called by some authors "the official plan of Rome" for this reason.⁹⁶ Gatti points to the guidelines faintly visible in some places on the Plan as attesting the care with which it was

⁹² On the inscriptions of the Plan, see Colini, *PM*, pp. 167-172; and *FUM*, pp. 25-34.

⁹³ The other Roman stone architectural plans have been reviewed above in Chapter 1. Even the Roman field survey plans (such as the example from the *Corpus Agrimensorum*, or the survey recorded in stone on the Orange Cadasters) invariably carried measurements to back up their diagrams.

⁹⁴ The date of the Plan is discussed above in Chapter 1.

⁹⁵ Gatti (*PM*), pp. 213-218, following suggestions by Jordan and Lanciani, has articulated this position. Some others who have followed the utilitarian purpose hypothesis: Harvey (1980), p. 128; Dilke (1987), p. 227.

⁹⁶ Dilke (1987), pp. 212 and 226.

created; such evidence, he says, supports the idea of the Plan having “a cadastral origin and purpose.”⁹⁷ This view would see the Plan as a land ownership record, very much in line with several of the other stone plans that we have reviewed earlier, which certainly identify property owners and specify the dimensions of their property in a way similar to the maps of the Roman field surveyors known from the *Corpus Agrimensorum*. As will be shown below, this utilitarian explanation of the Plan as a cadastral document is thoroughly contradicted by the evidence.

Theory of civil service purpose

Dilke is one of the only authors to attempt to describe some specific ways in which the Plan could have been of practical use for the city administration. His suggestions allow specific refutation, but it is to his credit that he endeavors to offer some possibilities, while most others only assert an “official purpose” of some indeterminate kind, or suggest “cadastral use” without considering any of the practical implications of the supposition. Dilke refers to the fact that the city of Rome had been divided into fourteen administrative regions in 7 B.C. by the first emperor Augustus.⁹⁸ The fourteen *regiones*, or wards, were subdivided into neighborhoods (*vici*).⁹⁹ These administrative divisions were correlated, after a serious fire in A.D. 6, with the assignment of a corps of *vigiles* (watchmen) who served as a fire brigade.¹⁰⁰ “As an example of possible map use,” Dilke, suggests, “if the *vigiles* could see from the map the location of the nearest aqueducts and *castella* (local reservoirs), they would be able to fight a fire more easily.”¹⁰¹ The *vigiles*, a corps of 7,000 freed slaves, were organized in seven cohorts, each having responsibility for two of the fourteen city wards.¹⁰² The cohorts were further subdivided into centuries, each under the command of a tribune. By the time of Septimius Severus in the early third

⁹⁷ Gatti: *PM*, p. 199. Coarelli seconding the cadastral use theory: Coarelli (1974), p. 121.

⁹⁸ Dio Cass. 55.8

⁹⁹ Pliny, *NH* 3.5.66

¹⁰⁰ Dio Cass. 55.8. On this subject see Baillie-Reynolds (1926).

¹⁰¹ Dilke (1987), p. 227.

¹⁰² On all the details pertaining to these watchmen see Baillie-Reynolds (1926).

century A.D., the *vigiles* had long been provided with sub-station quarters (*excubitoria*), one in each ward. It is exceedingly unlikely that any representative from a particular cohort would have been dispatched to the Templum Pacis to consult the Plan in the event of a fire emergency. Dilke, perhaps realizing this, suggests that “for this purpose copies of the relevant portions of the *Forma Urbis Romae* may have been made on papyrus or wax tablets,” but this runs into the considerable practical problem of rendering copies onto papyrus or wax from a 40-foot high wall-mounted marble plan.¹⁰³ Even aside from this obstacle, while Rome is, and was, a large city, there were men with the title of *aquarii* within the *vigiles* whose duties specifically included being familiar with the water resources of their patrol area. The wards were hardly so extensive that map consultation would have been needed for permanently stationed personnel. Dilke’s proposal at least offered the possibility of a practical use to consider, and the evaluation of it brings up useful points for consideration in further hypotheses. We can see that any suggested civil service or administrative use of the Plan will have to account for the same problems faced by Dilke’s theory.

Refutation of utilitarian purpose theories

The purpose of the Marble Plan is easier to determine when the full range of its characteristics are considered. Contributing to a tendency to misinterpret the Plan is the way we, as archaeologists and topographers, make use of the Plan. We consult it as a topographical reference because it is a wealth of topographical data. Therefore many researchers find it natural to assume that the Romans would likewise have used it in such a fashion for consultation regarding some aspect of the city’s topography, as cadastral records or with civil service concerns. The evidence, however, makes it clear that this kind of function was not intended, and was indeed impossible, for the *Forma Urbis*. While a few scholars have expressed doubt regarding a utilitarian purpose for the Plan,

¹⁰³ The quote is from Dilke (1987), p. 227.

and even observed elements of the proof against such theories, the complete range of facts has not heretofore been marshaled to present a compelling and conclusive case.¹⁰⁴

Immutability

As Anderson has observed, a property register rendered into stone would be out of date with the first transaction subsequent to its engraving.¹⁰⁵ He therefore objects to the cadastral function theory on this ground. It might be suggested that building construction and demolition were uncommon enough that the architectural layout on the Plan still might serve as a generally useful permanent record on which to record temporary and changeable annotations of private ownership, painted on but not engraved. However, extensive traces of the *minium* paint do survive on the preserved 28.1 square yards (23.5 m²) of the Plan, and these only occur in engraved areas. It may be concluded that there were no un-engraved temporary annotations in paint. The point remains that a stone property register would in fact seem “doomed to early obsolescence” as Anderson has argued, and in this light the gigantic *Forma Urbis* would seem a singular waste of effort as a cadastral map.¹⁰⁶ It must be recalled, however, that among the other Roman stone plans are several which are furnished with precisely the data and annotation that demonstrate that they were in fact property registers (or exact copies of them). We cannot determine whether such plans actually served the purpose of property registers or merely depicted them, but it is clear that the apparent impracticality of permanent stone property registers did not deter the Romans from creating them. Therefore, this specific point by itself cannot be considered conclusive against the cadastral register theory.

¹⁰⁴ Most notably, Anderson (1982), p. 70, has concluded that the Plan was not utilitarian in purpose.

¹⁰⁵ Anderson (1984), p. 116.

¹⁰⁶ *ibid.*

Lack of necessary data

The most compelling evidence against a cadastral function for the Plan is the inescapable fact that it simply does not include any of the information necessary for it to serve such a purpose. The Plan is furnished with inscriptions, but these are relatively few in comparison with the thousands of individual properties that are depicted. These inscriptions, closer consideration reveals, pertain not to privately-owned properties but almost exclusively to public buildings and spaces.¹⁰⁷ The numerous annotations of property ownership that should fill a cadastral document are entirely lacking from the Plan. We have seen examples of how functional cadastral maps appear, in the form not only of the agrimensorial plan from the *Corpus Agrimensorum*, but in the examples of several of the stone architectural plans, including the Isola Sacra plan, the Via Labicana plan, the Amerino plan, and the Via Anicia plan (Figs. 1.25, 1.26, 1.27, and 1.28).¹⁰⁸ Names in the genitive case of property owners appear in all these cases, disposed within the diagrams to occupy the property indicated. The Marble Plan, conversely, is stripped of this information, preserving only the titles of landmarks.

Also lacking from the Plan are any numeric annotations of measurement, which as we have seen were standard for functional maps in both the field and the urban survey traditions. It was the Roman practice to confirm the information provided by the scale map diagram with accompanying figures expressing measurements. In the field survey tradition these numbers typically measured area in *iugera*; in urban survey maps, numerals expressed length in Roman. This annotation even appears in maps for private purposes (the Perugia plan, Fig. 1.29; and the Urbino estate plan, Fig. 1.30) and in maps for quasi-decorative purposes (the Bath mosaic, Fig. 1.31). Obligations such as street maintenance, and presumably tax assessments, were tied to precise survey figures of such key dimensions as frontages, and these appear on the Roman stone plans where we expect

¹⁰⁷ On the inscriptions of the Plan, see Colini, *PM*, pp. 167-172; and *FUM*, pp. 25-34.

¹⁰⁸ See discussion above, Chapter 1.

them.¹⁰⁹ They undoubtedly appeared on the official cadastral records of the city of Rome. Nowhere on the Plan are measurements provided. Indeed, it looks curiously blank in comparison with the other Roman architectural plans. But this is of course only apparent when the context of the other Roman plans is fully considered.¹¹⁰

Ambiguity

Another trait of the Plan that can only be appreciated in comparison to the series of other Roman architectural plans is its graphic ambiguity. As we have seen above, the urban survey tradition employed a set of graphic conventions on a consistent basis in its architectural plans. Among these conventions was the practice of indicating walls in outline, giving the characteristic “double-line” appearance to walls in these plans. This consistency left single lines to stand out distinctly from the double lines that indicated walls. As a different symbol, single lines could without ambiguity indicate edge lines such as rooflines and temple podium edges. Once these conventions are understood, the Roman architectural plans are generally easy to read with confidence. The *Forma Urbis* stands in contrast to these plans by discarding the outline convention for walls. In the Marble Plan, walls *and* edges are both indicated with single lines. The result is ambiguity in many areas, where it is uncertain whether a line should be read (for example) as a wall, a step, or the edge of a roof. This difficulty of “translation” has challenged scholars of the Plan in their efforts to read its architectural depictions. What we see from the consistent series of other Roman architectural plans is that this ambiguity would have existed for the Roman map reader as well. By the Romans’ own standards the *Forma Urbis* is ambiguous. This is additional evidence that it would not have been put to any official purpose which would rely on the architectural data it displayed.

¹⁰⁹ On the responsibility of frontage maintenance, see Robinson (1992), pp. 59-82.

¹¹⁰ When the appropriate context *is* taken into account, it becomes quite surprising to find that Nicolet (1991), p. 158, is virtually alone in observing that “this is not a cadastre: there are no measurements or parcels of land.”

Inaccuracy

Although we may rightly be impressed at the overall accuracy of the survey demonstrated by the Marble Plan, we have seen that in specific detail it is not infrequently erroneous, even in the depiction of major city monuments. The correct number of columns in a row, and even specifics of building or room shape and proportion can be distorted in the engraving of the Plan. Some of these inaccuracies are not the mere oversights that one would expect in so gigantic a monument with so many thousands of rooms to depict, but are truly careless mistakes of sloppiness, as seen for example in the cella of the Temple of Minerva in the Forum Transitorium. In spite of the fact that this was an extremely large amount of inscription to carry out, it is nevertheless inarguable that the quality of engraving varies from "perfect" much more than one would see in (for example) extensive lettering inscriptions that were customarily carved into Roman monuments such as honorific arches. The previous chapter's review of the other Roman stone plans again allows this feature of the *Forma Urbis* to stand out for the anomaly that it is. Official architectural inscriptions were meant to be legible, and therefore they were carefully executed even in cases of very lengthy inscriptions comprising thousands of characters; likewise the consistent quality of execution seen in the Roman stone architectural plans attests to the fact that they were meant to be clear and readable, reflective of precise survey work in their crisp straight lines and in their documented accuracy, backed up with measurement annotations for complete confidence. The *Forma Urbis*, singular achievement though it is, does not hold itself to such high standards of accuracy or care in execution, neither with the perfectly accurate scale depiction of architectural features nor with the quality of the engraved lines themselves. This shows that the Marble Plan was not designed or created for official purposes that would have relied on its specific accuracy.

Inaccessibility

Finally, there is the greatly under-appreciated size and physical situation of the Plan to consider.¹¹¹ Some clarity on this matter should put to rest forever any theories that it was ever consulted for administrative purposes. Figure 2.1 makes the point. The scale of this monument is truly colossal. It can be easy to forget the practicalities that this simple fact entails, when we as scholars are accustomed to consulting the Plan in convenient, published plate-by-plate form in books. The situation with the real Marble Plan in antiquity could not be more different. Before any ill-considered suggestions arise, let it be understood that the room of the Plan in the Templum Pacis would not have been furnished with any pulley-equipped (or hydraulically activated) “cherry-picker” apparatus for conveying an examiner 35 feet into the air to consult an upper portion of the plan, nor would scaffoldings or ladders have stood before the plan (there are no surface marks for the accommodation of any such contrivances). It must be accepted that much of the Plan would have been just barely legible at best, due to the distance of the details from the observer. If necessary, this point may be more readily appreciated by laying this dissertation on a floor open to the frontispiece spread; step back 30 feet (ten paces or so) and attempt to study the figure. Additionally, imagine that you are not looking down at a comfortable angle, but that you are craning your neck to see up to the level of a third-story window. Woe be the unfortunate, squinting civil servant in the fire brigade dispatched to such a monument to determine the water reservoir nearest to a fire rapidly consuming his assigned ward. It was worse yet for the administrator faced with defining or asserting many hundreds of tax obligations on the authority of this inaccessible information, or attempting to use this stupendous towering cliff face to keep notes on property ownership. The surmise is unavoidable that the Marble Plan was not meant to serve a utilitarian purpose.

¹¹¹ “Indeed its scale would preclude any such [cadastral] use,” notes Anderson (1984), p. 117, of the Plan (also Anderson (1982a), p. 69). This important observation is worth more than a passing mention since the issue of the Plan’s purpose has stood so long unresolved.

Conclusion: decorative purpose of the Plan

Derivation from survey documents

Why then should such a tremendous amount of surveying work have been carried out for a project not meant for detailed inspection? Why was every last insignificant rear stairwell and closet, every back bedroom and storage bin methodically plotted out for final destination as a tiny square engraved 30 feet high on a wall, completely lost amidst thousands of other such tiny rectangles? The completion of such a city-wide survey would have entailed an extraordinary amount of work. The logistics of such an effort, accommodating the hilly topography of Rome, trying to extend long straight survey reference and sight lines in a city built to terrify urban planners with its rat's nest of meandering streets, are not to be underestimated. Shall we suppose that all this was nonetheless carried out, only for the exceptional degree of its conscientious detail to be effectively 'wasted' (from our point of view) on a decorative project?

The answer is to be found in realizing that the information that produced that Plan was not compiled for the purpose of producing the Plan. The great city survey that gathered all the infinitesimal detail did take place, as the Plan's thousands of rooms attest, but their engraving on the Plan does not prove that the Plan was the survey's *raison d'etre*. The survey information was gathered for administrative cadastral purposes, and would have been available for consultation in a useful form as a collection of scrolls, almost certainly kept in the aula of the Plan. The nature of such plans may be clearly imagined by recalling the series of other preserved Roman architectural documents, especially the Via Anicia plan, which is the prime example and a copy of an official cadastral map. With its private ownership annotations, its measurements, and its careful and detailed execution, the Via Anicia plan demonstrates the appearance of the standard urban survey cadasters, and it was from such maps on papyrus that the Marble Plan was abstracted. The archive collection of Rome's cadastral maps, probably updated on a piecemeal basis, made the

Plan possible. There were two *Formae Urbis*, one functional on papyrus and one symbolic in stone. So the Severan Marble Plan was not a waste of a colossal information-gathering effort; it merely made use of available information and collated the information from all the individual sheets in an impressive way.

Additional evidence supporting the identification of part of the *Templum Pacis* as an official cadastral record office has been assembled by Coarelli, who points out that the *Templum Pacis* served as the architectural model for the “Library of Hadrian” built at Athens, for the purpose of holding official records. Another such library was built in Alexandria, and extant references confirm its cadastral record archive purpose.¹¹² This additional information helps to confirm the surmise of the function of the *aulae* in the *Templum Pacis*, and assures us that the great Plan decorated a room devoted to the storage and use of cadastral records.

Simplification from survey documents

As the Roman designer of the Plan considered the project of transferring the data from the official cadaster sheets to the *Forma Urbis* wall, certain practical decisions were made that greatly affected the final form of the Plan we know. The inaccessible position and decorative purpose of the Plan meant that there was no reason to include the measurements, or the ownership information that soon would have gone out of date on the giant marble monument anyway; accordingly it was decided to omit them. The fact that the Plan was not meant to be consulted for any official purpose meant also that the Plan could be simplified from the drawings on the survey sheets. Certain clear and exacting graphic traditions of urban survey could be dispensed with for the sake of economy of effort. The most important simplification was that the standard outline (or double line) convention for walls was dropped, leaving single lines to represent walls. This cut the amount of engraving in half, with no effective compromise in image; in fact, the use of

¹¹² Coarelli (1991).

double lines would have rendered the Plan harder to make out from viewing distance, with the massed density of lines that this would have presented. The omission of this convention meant that ambiguity would be introduced, as roofline, stepline, and wall now looked the same, represented by identical single lines. But that was of little consequence since the clarity of these details was not important for the overall effect of the work.

The fact that the Plan would not be employed for official administrative purposes also meant that small transcription errors even in major monuments were acceptable, since (for example) the monuments in the city center would be engraved on the wall at least 25 feet away from the nearest viewer anyway. In the process of copying out the *Forma Urbis* from survey sheets, random errors were just as likely in major as in minor architecture; it was all transcribed as a mass. Unlike the surveyors, the engraver copyists were not dealing with the actual monuments; such direct experience might have encouraged greater care on the depiction of the more important structures.

A desire to enhance the prominence of public monuments and spaces on the Plan also contributed to the decision to omit private property annotations. Standing out amidst the mass of architectural detail, the remaining identifying inscriptions were prominent indeed, and one saw in the Plan a catalogue of the awesome number of great porticoes, fora, baths, theaters, and other monuments that made Rome a city of unparalleled urban magnificence.

Temples above all were emphasized. The outline convention was retained for this particular application, employed for the temple cellae. The space between the double lines was filled with a wide band of red *minium* pigment, standing out boldly amidst the thin spider web of architecture depicted with single lines. The exterior columns of temples were emphasized by the use of squares or dotted squares rather than the simple dots employed for columns in private architecture. The temple podia were defined with edge lines, outlining their locations and setting them off further. Temples were clearly meant to serve as orienting points for a viewer of the Plan, just as they served as orienting points in

the cultural, political, and architectural landscape of the city. By the omission of extraneous information, and by the emphasis of important subjects with inscriptions and special graphic conventions, public buildings were made prominent on the Plan.

The *Forma Urbis* was a showpiece, and an impressive demonstration of the fantastic amount of city information controlled by the city administration.¹¹³ As such it could dispense with the standard edge line conventions of the more detailed administrative plans in favor of the quicker mass lines, it could omit all the fine annotations which would have been unreadable anyway, and it could make numerous errors of specific detail, all without diminishing the success of the project's goal. This explains the Plan's departures from some standard Roman traditions (like high accuracy and the outline convention for walls), but its adherence to others (such as orientation and the 1:240 scale). The plan we see is the result of intelligent economy of effort. The annotations present on the plan served as orienting indicators, identifying public monuments that any viewer would know, so that to better appreciate the detail of the plan one could look for various familiar urban features. The city's temples were primary as such orienting nodes, and this explains the adoption of the suite of special emphasizing conventions for these structures. The Plan served as an appropriate decoration in the aula of the *Templum Pacis* which housed the products of so much diligent survey. It was a testament to the intricate and complete knowledge of the city maintained by the urban administration, and it was a spectacular statement of the grandeur of Rome--in general, as an object of pure spectacle, and in specific, as it presented a mighty catalogue of the luxurious amenities and noble monuments that made Rome such an extraordinary urban achievement.

Septimius Severus and the Marble Plan

Considering that this was the message of the Plan, one can perhaps understand why Septimius Severus had it created. This African emperor is known for much urban

¹¹³ Nicolet (1991), p. 158, called it "not a cadastral plan, but rather a prestigious monument connected to the prefecture of the city...."

construction in Rome, including repairs to the Pantheon, the Porticus Octaviae, the Templum Pacis, the Temple of Vespasian, and some arches and a castellum of the Aqua Claudia aqueduct. He restored river embankments, built baths, and also added a new wing, the Domus Severiana, to the Imperial Palace on the Palatine.¹¹⁴ But nearly all these efforts were repairs or embellishments to existing structures. As Richardson has observed, “Almost the only monumental work for which Septimius was responsible in Rome” was the curious creation known as the Septizodium.¹¹⁵ This was a colossal display façade of columns framing niches and statuary, nearly 100 feet tall and over 300 feet long, ranged like the backdrop of a Roman theater in front of the emperor’s palace, exactly where the great avenue of the Via Appia met the foot of the Palatine Hill. It is sometimes erroneously called a gateway, but in fact it was not, which is important: it was a display façade only, a gigantic decorative monument to the splendor of Rome that served no utilitarian purpose whatsoever.¹¹⁶ This phrase could be applied equally to the *Forma Urbis*, and one can perhaps see in the two a consistent vision and concern of this emperor.

If there was in fact a Flavian predecessor to the Marble Plan we know, then the Severan monument is only to be considered a part of the rebuilding of the damaged Templum Pacis; it would have been restored like any other component of the building, based on the most up-to-date survey sheets and laid out anew. But as we have seen, the case for a Flavian Plan is not yet compelling, and the conception of a Marble Plan of the city would not be out of keeping with Severus’ activities. This emperor is known for his administrative reforms, both throughout the empire and in the city of Rome. It was under Severus that Rome received its official designation as *Urbs Sacra*, the Sacred City, and

¹¹⁴ See Murphy (1945), pp. 30-33, and the SHA, *Sev.* 19.5. Most of this construction and repair activity is attributed to the years A.D. 201-203. Doubtless a significant amount of it was necessitated by the damages from the fire of 192.

¹¹⁵ Richardson (1992), p. 350.

¹¹⁶ This “column display façade” is a feature of the Roman architectural vocabulary that was adapted for a variety of uses in the later empire, including city gates (Miletus), building façades (the Library of Celsus at Ephesus), and, in the Roman East, monuments to the worship of the Imperial family. See MacDonald (1982) pp. 183-203 for a treatment of this genre as a component of developed Roman urbanism; Yegul (1982) for discussion of the display façade in connection with the Imperial cult.

this emperor also reinstated the public distribution of free grain, and began the distribution of olive oil.¹¹⁷ Together with his rebuilding of a number of important monuments in the city, Severus' reorganization may have given him a claim to having renewed the Eternal City. The Marble Plan may be a monumentalization of this claim and celebration.

Wall maps known from two other Roman contexts contained accurate geographic detail but served propagandistic purposes. As has already been mentioned in the previous chapter, Agrippa installed a map of the world on a wall in the Porticus Vipsania. Nicolet has seen in this map a graphic counterpart to the *Res Gestae* of Augustus, in which that emperor recounted the inventory of territories and peoples he had conquered for the glory of Rome.¹¹⁸ A late successor to this map is the Autun wall map, of the late century, designed for use in a school.¹¹⁹ The rhetorician Eumenius describes the map as a tool to illustrate the far-flung possessions of the emperor.¹²⁰ To these comparanda may be added the great civic inscription of Ephesos (Fig. 57).¹²¹ This large inscription, densely lettered and in its upper reaches doubtless barely legible, asserted the sacred identity of the city in connection with its foundation myths. The inscription was mounted as large stone panels on a wall. All these monuments recall the Marble Plan in general aspect.

Septimius Severus was highly conscious of the 'propaganda' value of non-utilitarian decorative urban architecture. Severus' home city of Lepcis Magna in North Africa is famous for the great investment Severus made in it by gracing it with extensive urban decoration, particularly the long colonnades majestically lining the streets and the arches at intersections. These were primarily monuments of display rather than utility. They contributed to the articulation of the "Roman urban armature" that MacDonald has

¹¹⁷ On Severus' reign see the biography by Birley (1988).

¹¹⁸ Nicolet (1991).

¹¹⁹ Modern Autun, France, was Roman Augustodunum.

¹²⁰ Eumenius' words about the Autun wall map are preserved in section four from the ninth of twelve Latin panegyrics collected by Mynors (1964). Eumenius was born c. A.D. 264.

¹²¹ Rogers (1991) provides an extended consideration of this inscription and its meanings.

described, and enhanced the intensity of the experience of a Roman urban center.¹²² It is in this context that we should see Severus's Septizodium, and it is the best explanation for Severus's Marble Plan as well. With the Marble Plan he set forth not a mere testament to Roman urban survey or urban administration, but a reminder, a litany, a magnificent celebration of the Roman urban achievement.

The most notable event in Severus' reign with which the Plan may be connected was the celebration of the *Ludi Saeculares* in A.D. 204. These religious observances and associated games marked 110-year eras according to an ancient tradition Etruscan in origin. Augustus had celebrated *Ludi Saeculares* in 17 B.C. to mark the beginning of a new "golden age," and Severus took advantage of the fortunate opportunity to encourage similar sentiments in his own day by marking the *Ludi Saeculares* with all appropriate ceremony.¹²³ This great event was commemorated with various activities and dedications, including coin issues.¹²⁴

For Severus the *Ludi* also marked a turning point for his image, which was redefined at this time. Severus had been ill-received by the plebs in A.D. 193 on his first visit to Rome, and his relationship with the Senate had been troubled as well. The iconography of his earliest coinage is strongly military in nature, specifically referring to the German and Pannonian legions that were his power base. Victory also figures prominently in these coins.¹²⁵ Sometime after A.D. 201, the iconography of Pax and Concordia first appears in his coinage, and the *Ludi Saeculares* may have been a particular moment of redefinition for Severus' image, in which he put some of his harsh past behind him in favor of the ideals of the peace, stability, and harmony promised by the new golden age.¹²⁶ One

¹²² MacDonald (1982).

¹²³ On Severus' celebration of the *Ludi Saeculares*, see Birley (1988), who collects the relevant ancient sources and describes the activities involved.

¹²⁴ Kent (1978) illustrates two coins (his nos. 391 and 192) which commemorate Severus' *Ludi Saeculares*.

¹²⁵ See Robertson (1977) for illustrations of Severus' early coins.

¹²⁶ Coins of Caracalla minted under Severus between A.D. 201-206 include legends of *CONCORDIAE AETERNAE*, and *CONCORDIAE FELIX*; some from A.D. 206-210 refer to the *PACATOR ORBIS*. These are illustrated in Robertson (1977) in pl. 17, nos. 33, 34, 35, and pl. 18 no. 60. See also pl. 7 nos. 87 and 98, and pl. 20 no. 97.

particular coin shows Severus and Caracalla sacrificing before Concordia in honor of the Saecular celebration.¹²⁷ The great image of the city of Rome dedicated in the Templum Pacis may have been intentionally associated with the Aedes Pacis, the actual Temple to Peace which the room of the Marble Plan adjoined, creating a symbolic link between Severus' new Rome and the ideal of Peace as part of the refined imperial image.

Psychological implications of the Plan

The *Forma Urbis* is customarily employed by archaeologists in the study of the ancient city's buildings; in the scholarly literature it serves almost solely as a body of topographical information, with some consideration of it as a demonstration of Roman surveying abilities. The Plan has other possibilities as well, however, not only as a document of Roman urban fabric but as a cultural artifact. In this capacity, the Plan can offer insight into Roman psychology through aspects of both its conception and its execution. Its statement of the Roman emphasis on the tangible has already been discussed above; this is an aspect of its conception. Aspects of its execution, and its very existence, can lead into other cultural-psychological perceptions. In this connection, the uniqueness and peculiarity of the Plan must be appreciated for its psychological implications to be properly considered.

The Romans were hardly the first to make plans, or maps. There were precedents in other cultures, as far back as the scale building plan that is part of a statue of Gudea of Lagash from Sumeria, dated to c.2100 B.C.¹²⁸ We even find city plans of great antiquity in Mesopotamia: there are two small plans of Nippur dating to c.1000 B.C., which display identifiable features such as the Euphrates river, canals, the main temple, and the city wall (with named gates). Measurements are included on these plans, which were presumably related to property sales or disputes. The making of plans or even scale city plans is not peculiar to the Romans, nor their innovation.

¹²⁷ Banti (1986), p. 76 no. 143. The coin is dated to A.D. 202-211.

¹²⁸ Dilke (1985), p. 12.

A strong tradition of survey and map-making existed amongst the Romans long before the *Forma Urbis* was created. The Roman interest in the carefully-surveyed grid plan for new city foundations is well-known from the Republic, and the preserved body of literature under the title *Corpus Agrimensorum* attests to the land-surveying tradition with treatises dating back to the first century A.D. The complementary literature for the *Mensores Aedificiorum*, urban surveyors, is lost, but the orderliness of major Roman architecture (such as the aligned series of Imperial Fora) demonstrates the advanced development of this science in Roman culture. So the urban survey that produced the information recorded on the *Forma Urbis* was only the practice of a centuries-old tradition by the end of the second century A.D.

It is because of both its spectacle and its context that the Plan stands out as extremely unusual, and without compare in earlier or later civilizations, including our own. Archaeologists may fail to appreciate just how odd the Plan is because of the unusual documents we are familiar with from our work. We are accustomed to maps and plans of buildings and cities of the ancient world, and the Marble Plan may seem like only one more, one that the ancients happened to make rather than ourselves. But the presence of this map *within* the living culture it documented is the extraordinary case that must be considered for the significance and unique nature of the Plan as a cultural artifact to be fully appreciated.

The Plan is quite unique from other maps in its public presentation of private space. The Romans viewed the issue of public and private differently than we do in some respects. Many aspects of Roman public life occurred within the context of privately-owned space, such as the custom of *salutatio*, a required social interaction for men of high status, and one which was distinctly political for men who would hold office.¹²⁹ The

¹²⁹ Clients would pay their respects to their patron in the morning by visiting the patron's house. Certain clients would be invited inside for an audience with the patron, for which the atrium was the traditional formal meeting room. The atrium was designed to give the house and patron a most grand and imposing appearance (with overly-large doors hiding tiny rooms off the atrium, for example). On this ritual see Clarke (1991), pp. 1-29, and Wallace-Hadrill (1994).

traditional Roman atrium house was designed to serve this customary interaction, and its atrium space formed a semi-public zone within the private house of a man of status. This third category of space finds a graphic expression in the 1748 Nolli plan of Rome, which expresses this concept of semi-public space within many buildings: in showing the public spaces of Rome, Nolli felt it necessary to include the interior areas of buildings that he considered public space. Only those parts of the interiors that he considered public were revealed, and other more private areas were left obscured (Fig. 2.58).

Nolli's plan preserves the notion of public within private space even if it does not express the gradations that could exist in this system. A semi-public atrium by no means meant that a noble Roman's house was entirely open to public view or experience. Privacy was carefully managed in the *salutatio* system, with closer confidants gaining access to areas of increasingly restricted access in the house. From the literary attestations to this, we may be sure that among the higher-status Romans at least, there existed a consciousness of private space that is akin to modern sensibilities.¹³⁰ It is in view of this that the open display of private space on the Plan is so surprising. Every citizen's bedroom and back closet was on display here. There is no distinction at all in the graphic treatment of public and private space.

One speculative avenue of explanation for this extraordinary display is along the following lines. By the time of the Plan's creation, the rhetoric that Rome ruled "the whole world" had been around for a long time: it had been over 250 years since Pompey's theater was built celebrating his conquest of the far reaches of the map, and the introduction of the *cosmocrator*, or 'world-ruler' concept to Rome. In spite of an awareness of foreigners beyond various borders, by the Severan age, for most of the millions of citizens of the empire, the whole world *was* effectively Roman, from Britain to

¹³⁰ At the same time it must be admitted that for the nearly destitute urban masses, privacy was just one more luxury commodity far from their reach or experience. And while certain Roman standards strike us as odd (such as the public toilets which seated dozens at a time with no privacy whatsoever) it is clear from literature and architecture that for those who could afford it privacy was greatly desirable. The privacy compromises accepted by the urban plebs were mostly borne of necessity rather than of attitudes different from our own. For a discussion of Roman privacy, see Scobie (1986), pp. 428-430.

the Near East. The feeling that the unifying state of Rome may have engendered is hard to appreciate in the modern era, when no such comparable unified state of formerly so diverse peoples exists. For the ancient Romans, the Roman state ruled 'everything.' All space was Roman space, and perhaps provincial and other boundaries paled in comparison to the overall Roman identity. It is from this kind of outlook that one might derive the concept of the Plan as acceptable, even natural. If all space was Roman space, then the boundary between "your" bedroom and "the city's" street may have been considered entirely subsidiary to the classification of it all as Roman space. Whatever the true connotations may be, the anomaly of the Plan's public presentation of public and private space is not to be dismissed lightly. It is one of the Plan's more remarkable features.

CHAPTER III

ARCHITECTURAL VOCABULARY OF THE MARBLE PLAN

Introduction

The ability to read the conventions used on the Plan is comparable to being able to read the letters of an inscription. Now we must examine the words made up from those letters, the building types indicated by the Plan's architectural symbols. This chapter will endeavor to set forth a partial legend of building types that appear on the Plan. An architectural vocabulary, an inventory of types, is one of the primary components of urban analysis. Alexander et al. established the idea of an architectural "pattern language" to describe the components of buildings; Watts applied this approach to Roman archaeology in the houses of Pompeii, Herculaneum, and Ostia.¹ The architectural vocabulary that follows here provides a pattern language, or architectural typology, for the Marble Plan and at the same time for Severan Rome. This chapter links the study of the Plan itself to the study of the architectural and urban structure of ancient Rome presented in Chapter 4. A pattern language organizes data even when some aspects of its meaning are not understood, and the study is therefore useful even when specific building identities remain enigmatic.

¹ Alexander et al. (1977), Watts (1987).

R. A. Staccioli began a serious typological analysis of the Plan in 1959, with a series of articles devoted to certain classes of buildings as they appear on the Plan, and including a typological index that accompanied the landmark 1960 edition of the Plan.² Staccioli repeatedly called for the isolation and analysis of building types on the Plan, and framed much of his own work as introductory to further studies. I have acted on his suggestions in the work carried out above with temples and entertainment buildings, and the results validate Staccioli's recommendations, just as the conclusions of his own articles did. This chapter will in some instances travel paths partly blazed by Staccioli, and in other instances explore other routes that he suggested. The typological analysis presented here will clarify certain classes of buildings common in Severan Rome, and will assist in forming an understanding of the conditions in which the populace lived.

Non-Monumental Focus

This presentation of an architectural vocabulary of the Plan will have an exclusive focus on "non-monumental" buildings. This term excludes temples, basilicas, great Imperial baths, monumental fora, political buildings, entertainment buildings, and the like, but it includes dwellings, commercial buildings such as shops and warehouses, and minor neighborhood baths. There are several reasons for this dichotomy between monumental and non-monumental buildings.

First of all, I have already treated temples and entertainment buildings earlier in Chapter 2. Useful conclusions emerged from the study of these types, and none of that material requires repetition here. More generally, however, major monuments are already reasonably well known and are the easiest elements to interpret on the Plan, typically recognizable without difficulty (such as the obvious temples, theaters, and Imperial baths), and they are often even provided with identifying inscriptions. While the Plan has proven

² Carettoni et al. (1960) *La Pianta Marmorea di Roma Antica*, hereafter *PM*. This is not to slight Zığans (1941), who presented the first typological study of a building type on the Plan in an article on dwellings on the Plan.

very helpful in clarifying the structure of many such buildings, an extended treatment does not belong here because much of this clarification has already been mined from the Plan elsewhere, published in the specific works on these structures and collected in general topographic references.³ In fact, such references present a marked contrast to what is offered here. They focus almost exclusively on monumental buildings, not least because these structures are the easiest to which specific titles can be given (“The Forum of Augustus,” “The Theater of Pompey”). For a dictionary or encyclopedia of Roman topography this attribute is necessary. But what this leaves is a large gap in the material presented by the Plan that has been thoroughly explicated: the non-monumental material, the residences and commercial buildings of the city.

Few authors have touched on this material, and each has repeatedly called for more specific typological analysis of the non-monumental architecture represented on the Marble Plan.⁴ There are a number of reasons why this analysis is worthwhile. To begin with, the non-monumental buildings are harder to distinguish on the Plan. They do not fall into types as easily, they vary in form more than the monumental buildings, and they are usually much less distinct, agglomerated rather than freestanding and usually smaller than monuments. In its depictions of the non-monumental portions of the city the Plan is at its most ambiguous. While some of this ambiguity defies even the most intense scrutiny, the non-monumental parts of the Plan “open up” to perhaps a surprising degree when approached typologically.

Further, the Plan offers a unique view of the non-monumental dimension of urban Rome. Literature provides vital evidence, but in general terms, without direct depiction or descriptions of structures. Residential and commercial Rome has been thoroughly destroyed or obscured by the ages, far more so than monumental Rome, and where residential and commercial architecture did survive, it was usually of lesser interest to

³ Such as Richardson (1992) and Steinby (1993 and 1995).

⁴ e.g. Zığans (1941), Rickman (1971) and Staccioli (1959, 1961, and 1962).

researchers, and commonly ignored or left unrecorded during excavation or demolition.⁵ The Plan presents the only surviving accessible evidence for hundreds of 'common' buildings in the ancient urban matrix that can never be explored in any other fashion. Urban analysis cannot concern itself exclusively with the monumental elements of a city.⁶ The residential and commercial components support the living humanity and culture that creates the monuments, and is crucial to the balanced understanding of urban culture. In many cases monuments express what an urban culture *wants* to believe or project about its identity, while the residential and commercial matrix expresses an 'unpackaged' reality.

To fight the tendency for the Plan to become a chaotic haze, I will continue the graphic approach I have adopted with temples and theaters of carefully isolating each individual element from surrounding extraneous confusion, as well as identifying significant elements in the figures with explanatory marks and titles. This clarifies the discussion and simplifies the task of the reader in connecting description with illustration. I am convinced that this apparently minor difference in presentation can make a significant difference in comprehension.

Accordingly I will illustrate specific architectural types with representative examples from the Plan, graphically identifying the features or formulae which make them identifiable. Through this approach I intend not just to demonstrate that we can find such types within the Plan, but to give the reader the ability to see these patterns independently.

⁵ Rickman (1971), p. 89, for example, laments the tantalizing references by Lanciani at the end of the nineteenth century to the ancient contents of Roman warehouses still in place, exposed during clearing of the riverside warehouse districts, but never properly recorded.

⁶ An obvious point, but it remains true that many architectural assessments of Roman cities focus almost exclusively on monumental structures. Part of this bias arises naturally from the superior preservation of monumental buildings, but in general non-monumental urban analysis of classical cities is comparatively neglected.

Limitations

Some ambiguity remains, even after careful scrutiny of the Plan. There are limitations to what can be learned from an architectural analysis of the Marble Plan. Many Roman building types could serve multiple functions, which are impossible to distinguish on the Plan. The common single-room shop, for example, might be a cobbler, bookseller, lunch counter, or many other possibilities, and without archaeological information specific identification can never be made.⁷ Small industrial complexes are likewise opaque on the Plan. General types served many industries, and these are also left ambiguous by the limited information available on the Marble Plan. The structure of a single-tenant apartment and a rooming house for several tenants of families could be exactly the same in ancient Rome; the evidence of the Plan cannot convey whether such a space was ornate or poorly built, or whether it was inhabited by a single prosperous owner or by crowded tenants of meager means. It is necessary therefore to deal in generalities, but archaeological comparanda and literary evidence provide useful models and offer an awareness of the range of possibilities within general categories.

It might be objected that architectural categorization itself is inappropriate for Rome, since the Romans blurred so many distinctions that modern American society is accustomed to keeping clear--religious and political buildings, for example, or (as will be shown) residential and commercial spaces.⁸ Nonetheless, certain categories still apply, especially when they are drawn from Roman terminology and conception; and when the

⁷ This is not only a difficulty of the Plan. Foss (1994), p. 118, observes that even at the rich archaeological site of Pompeii, "it is often not possible to know whether a building was used for retail, production, or both."

⁸ E.g. the assertion of Wallace-Hadrill (cited in Foss 1994: 120) that "modern boundaries of work versus residence, business versus leisure, dissolve...in the Roman house. Any analysis that attempts to distinguish the residential units of Pompeii from commercial or industrial ones must founder on this objection." It will be shown below that court spaces on the Marble Plan do tend to fall into broad categories, which may be distinguished as primarily residential or primarily commercial. Wallace-Hadrill's objection is an important concern and prevents specific data being pushed too far, but it should not blind us to the possibility of discerning legitimate general categories.

Roman use of a particular architectural genre is understood, the category stands as perfectly useful.

Not all of the architecture depicted on the Plan falls readily into categories. Some remains ambiguous and uninterpretable at present. Errors and simplifications in the Plan engraving exacerbate this problem, such as the omission of doorways, for example, confusing the connection and separation of space in a structure. Such examples may only be presented as enigmas.

Another complication of using the Marble Plan as information about the ancient city is that it illustrates only the ground floor of all buildings. This is a problem, because Rome was a multi-storied city. Cicero refers to its apartments as “raised up and suspended” and constructions like the high-rise *insulae* were so famously sky-scraping that they stood as metaphors for the very heights of heaven.⁹ It was the apartment buildings which reared so high in this increasingly crowded city, and landowners eager to maximize rental profits built too high and too cheaply. The emperors had to pass edicts limiting the height of apartment buildings in the interest of public safety; Augustus, for example, limited the height of buildings to 70 Roman feet (about 20 meters), which shows that even at the end of the first century B.C. buildings were dangerously exceeding that height.¹⁰ In the Severan Marble Plan, depicting Rome at the beginning of the third century A.D., we are shown only one level of an urban layer cake that was often six, seven, and eight stories high.

While the Plan’s single level from these strata is greatly illuminating, it is a kind of filter, because a building in Imperial Rome would not necessarily be the same on every floor. Many buildings might repeat essentially the same plan for upper floors, but in other cases residences could overlies baths, or workshops, or warehouses, and the economic

⁹ Cicero: *De Leg Agr.* 2.96, *Romam cenaculis sublatum atque suspensam*. Tertullian uses the height of the *Insula of Felicula* in Rome in a metaphor about the distance between god and man (*Adv. Valent.*, 7).

¹⁰ Strabo 5.3.7.

status of tenants varied with the altitude of their dwellings. All this makes the ground-floor sample of the Marble Plan only a limited portion of the city itself.

However, this is less a problem than it may seem at first for urban assessment. Deprived of archaeological detail, we cannot extrapolate buildings heights from ground-floor wall thicknesses, as is done at Ostia.¹¹ But other approaches limit the degree of mystery regarding the 'missing' upper floors of Rome. First of all, virtually everything above the first floor was residential. Some warehouses would rise to two floors, but other non-monumental architecture almost always became residential at the second floor level and above, whether the ground floor was a bath, a row of shops, or dwellings. Therefore, the Marble Plan's ground floor sample is the most useful and most diverse level of the city, representing the maximum degree of architectural composition and variation. The problem of the upper floors is reduced to determining the number of stories and the diverse character of the residential spaces they housed.¹²

While such determination is speculative, certain parameters of the ground-floor architecture can provide guidelines. Ostia has served as a helpful model in this regard. The apartments of Ostia are constructed with a strong priority for being open to light and air.¹³ This was a concern because ventilation was poor and lighting methods (oil lamps) were crude and of limited effectiveness, as well as very smoky. The houses of the rich turned inward on their open atria and peristyle courts, obtaining sun and air without sacrificing privacy (and such atrium houses were never more than two stories high). The smaller apartments commonly faced outward to the public street with large windows, and such apartments would be ranged around shared courts wherever possible to maximize the rooms' access to light and air. In apartments there was a much higher density of cooking and lighting fires than in private houses due to the much higher density of occupation, making their need for access to light and air the more acute. This principle can be seen to

¹¹ Hermansen (1981).

¹² This problem remains important for demographic calculations based on the architecture of the city.

¹³ Hermansen (1981).

have guided the design of the Ostian apartments, and it appears to have operated with equal strength in Rome. This need for direct access to light and air in apartments provides a clue for the extrapolation of upper stories from ground floor plans. It may be inferred that buildings of extensive square footage without courtyards would not have had upper stories (for example, the magazine warehouses in Figure 3.38).

A final and serious possible objection to typological analysis of the architecture on the Marble Plan is the assertion that the data it contains is not representative of reality. I have already taken pains to assess the faithfulness of the Renaissance drawings to the original marble fragments of the Plan, and I have likewise assessed the accuracy of the Plan engraving by comparing it to archaeological evidence where possible. However, it must be conceded that this comparison has only been possible for prominent or monumental buildings.¹⁴ Can doubt be cast upon the residential and commercial matrix as depicted by the Plan? It might be suggested that the Roman surveyors would have “cut corners” in the survey of the less important architecture of the city, and even invented much of what appears on the Plan in order to fill space within surveyed perimeters. The evidence of the engraving itself refutes this objection.

While there were certainly errors and omissions of the types that have been discussed above (Chapter 2), a thorough examination of the architecture on the Plan reveals that even where apparently chaotic, it can be sorted into component types to an extensive degree. Further, apart from those rooms where doorways have been omitted (an uncommon but standard class of error on the Plan), the residential and commercial architecture depicted on the Plan does not present nonsense. Instead, the buildings can usually be sorted out into independent structures, and the spaces into comprehensible networks of connection and separation that agree with our understanding of Roman interior architecture. The fragments of the Plan depict a wide, complete variety of forms, including those seen in

¹⁴Although the *tabernae* and even the staircases of the Circus Maximus were shown to be depicted with scrupulous accuracy, it might be objected that this was a major structure whose exterior composition was easy to survey.

Ostia and Pompeii, those expected from literature, and unexpected forms distinctive of Rome. A range of house types appears, for example, from the *tabernae* of the poor through the atrium houses of the rich, and including the apartment flats of those in between. Since the review of Roman stone architectural plans (Chapter 1) has demonstrated a survey discipline of painstaking accuracy, according to which measurements were commonly annotated for certainty, and since the evaluation of Roman survey accuracy based on the Plan has shown it to be carefully laid out, it seems virtually impossible that a marble plan would be created at this standard and then completed with fictitious detail that nonetheless presents a complete spectrum of Roman building types with comprehensible room layouts. The conclusion must be that the Plan does in fact represent real architecture, in the residential and commercial matrix as well as in the great monuments.

Dwellings

Severan Rome was filled with a wide variety of dwelling types. At the top end of the scale, the emperor's Imperial palace sprawled over most of the Palatine Hill, occupying the space where many of Rome's greatest mansions had once stood.¹⁵ At the other end of the scale was homelessness, for many of Rome's residents lived in the streets. Of the two extremes, one is monumental and beyond the present focus, and the other is architecturally invisible. This study will deal with the complete range of dwellings between these extremes, as seen on the Marble Plan.

The Marble Plan is the only source that provides a substantial amount of data regarding the structure of dwellings in Rome. Better-preserved Roman cities, particularly Ostia and Pompeii, frequently stand in for Rome in discussions of that city's residential architecture;

¹⁵ Septimius Severus himself was responsible for substantial additions to the palace structures (SHA *Sept.*24.4-5). Among the famous houses on the Palatine was that of Cicero (Cicero, *Dom.* 100; see references collected in Richardson (1992), p. 123).

authors commonly present these cities as comparable to Rome.¹⁶ The result is that the nature of Rome's residential architecture is often discussed on the basis of evidence occurring elsewhere, which is not necessarily representative of the extraordinary Imperial capital.¹⁷ Ostia is well known for a particular kind of apartment flat which is common there (the *medianum*), but this type is little known elsewhere. The grand atrium houses of Pompeii are justly famous, but their vast extent was more characteristic of a fashionable seaside town than of the hypercrowded heart of Rome. In Rome itself, as will be shown below, *tabernae* backing onto or surrounding courts were particularly common, while this type is virtually unknown in Ostia and Pompeii.¹⁸ Archaeologically-investigated Roman cities offer much valuable insight into Roman urban structure, and these insights greatly assist our understanding of Rome itself. But Rome was a unique situation in many ways, not least in its unparalleled magnitude, and caution must guide any attempt to characterize this city on the basis of other towns, particularly those with populations only 1-2% of its size.¹⁹ The data of the Marble Plan become of great interest regarding the dwellings of the ancient city. With the important assistance of ancient literature and Roman law, a surprisingly complete picture of residential architecture in ancient Rome emerges from the Marble Plan.

The Roman *Insula*

In any ethnographic study it is generally best to employ the units used by the studied population where possible. Forcing the data into modern categories often distorts

¹⁶ e.g. Hermansen (1981), p.10: "When studying Ostia one studies Imperial Rome of the same period, with minor differences...."

¹⁷ Carcopino (1968), e.g. p. 47, warns against the careless application of analogies from Ostia and Pompeii, from the nature of apartment buildings to the presence of street paving. Each of these cities had a distinct identity, and the small sample is not sufficiently large for generalizations to be carried from one to the other city without consideration.

¹⁸ Staccioli (1959) noted the absence of this type from Ostia.

¹⁹ Rome is usually reckoned at holding a population of roughly one million (Hermansen 1978: 129 surveys the methods and some of the results of population estimates for Rome; Jongman 1988: 73-4 discusses the subject as well). By contrast Pompeii, for example, is commonly estimated at ten or (more likely) twenty thousand (discussion in Jongman 1988: 108-112).

important aspects of those data. Divisions appropriate to Roman conceptions of dwellings will be used here as a framework when they can be determined from either archaeology or literature. Roman dwellings are called either *insulae* or *domus*, the terms corresponding to ‘apartment houses’ and ‘private houses.’ This division reflects a basic Roman distinction, since the ownership of one’s own home was an important index of high status, available only to the privileged few.²⁰ The Roman *domus*, especially in its classic traditional form of the atrium house, is well known from literature and from the Campanian cities buried by Vesuvius. The atrium houses around the Bay of Naples find counterparts on the Marble Plan, and this type serves as a useful model for upper-class housing, although atria at Rome appear to have been generally smaller than those of the Campanian cities.

The term *insula*, on the other hand, has been the subject of long-running debate, primarily because of the term’s central role in estimations of Rome’s population. Most population estimates for the later empire are based squarely on the statistics given in the Regionary Catalogues, where totals of approximately 46,000 *insulae* and 1,800 *domus* are listed for the city.²¹ “It is speculation on the meaning of the word *insula* and on the possible number of persons that might be assigned to each *insula* which determines the final population figure for Imperial Rome.”²² About *domus* there is no disagreement; it is well accepted that this refers to private houses. *Insula* appears to mean “apartment house,” and often imagined on the basis of preserved Ostian examples, but *insula* has also been given a wide variety of readings in the course of efforts to reconcile the term with the high numbers of *insulae* recorded in the Regionary Catalogues, particularly for the limited area available in the eighth region, the Roman Forum.²³ Hence have arisen the interpretations

20 Juvenal 10.18, for example, expresses this sentiment.

21 Hermansen (1978), p. 129-131, discusses the problem of the meaning of *insula* and its key role in population estimates for Rome, in connection with tallies of *insulae* in the Regionary Catalogues. Two significant studies to have used the Regionary figures for population estimates are Maier (1953-54) and Brunt (1971).

22 Hermansen (1978), p. 129.

23 e.g., the Regionaries record 3,480 *insulae* in the Roman Forum region (VIII). This is an impossibly high number if each *insula* is to be restored as one of the large Ostian-style buildings.

of “*insula*” as a smaller unit of dwelling, such as “apartment flat” or “apartment floor.”²⁴ However, examples such as the *Insula* of Felicula show that these are mistaken readings of the term. The *Insula* of Felicula was a huge apartment building famous for its astonishing height.²⁵ As the term is singular, *insula*, rather than plural, *insulae*, it is clear that the term applies to the building, not to the apartments it comprised. *Insula* literally means island, its architectural application arising from the way in which a large apartment block is isolated by the streets that surround it. Latin authors often use the pair of terms “*insulae et domus*” to indicate all dwellings in the city, “the apartment houses and the private houses.” Tacitus, describing the disastrous fire of A.D. 64, says that he cannot even count the number of ‘*domus, insulae, and temples*’ that were destroyed.²⁶ The *Historia Augusta* includes an account of the fire during the reign of Antoninus Pius, which burned 340 dwellings *insulae vel domus*.²⁷ The appearance of the terms together in the Regionary Catalogues demonstrates the continuing use of the pairing to refer to all residences in the city. Further, Roman legal references make it clear that an *insula* is an independent building unit which may be subdivided into *cenacula*, apartments, of which each might contain several rooms.²⁸ We should read *insula* as “tenement or apartment building,” or perhaps “multiple dwelling” if “apartment” conjures up inappropriate modern connotations.²⁹

The Roman *insula* has been too often characterized on the basis of the famous ruins at Ostia, where well-built brick apartment blocks of standard plan still stand in testament to

²⁴ Reading *insula* as apartment flat would render it synonymous with *cenaculum*; this is the suggestion of Cuq (1915). Von Gerkan (1940) prefers to read *insula* as one floor of a tenement. Maier (1953-54) suggests “surveyor’s unit,” conveniently vague, and Castagnoli (1976) proposes that it applies to any unit of habitation. Packer (1971), p. 79, regards it as indicating any kind of “multiple dwelling.” Hermansen (1978), p. 130, surveys the wide variety of interpretations in scholarly writings.

²⁵ This tenement is mentioned in the Regionary Catalogues, and in Tertullian’s *Adv. Val.* 7.

²⁶ Tacitus, *Ann.* 15.41.

²⁷ SHA, *Pius* 9.1.

²⁸ Hermansen (1978) marshals the relevant references, pp. 129-131.

²⁹ The continuing Roman use of the two separate terms *insula* and *domus* also demonstrates the degree to which private home ownership remained an important class distinction. No author lumps the two categories together as simply “all residences.”

Roman order and construction technique (Fig. 3.1).³⁰ As already noted, while these are very characteristic of Ostia, they are not necessarily characteristic of Rome, in spite of the fact that they are often pressed into service for scholarly studies describing the capital.³¹ The poor quality of construction of many Roman *insulae* is well attested by ancient authors, and the typical *insula* of Rome must be imagined as far less sturdy than its Ostian counterpart. Ancient commentators describe *insulae* in Rome as built by speculators on the cheap. They were highly profitable due to the high rents.³² Among the investments of a certain Afer, the rents of his *insulae* and estates ran into the millions; they were his most profitable assets.³³ One of the friends of Aulus Gellius remarked at the extraordinary income realized by owners of city property, and declared that he would sell off his country estates to buy land in the city, if only it did not burn so often.³⁴ *Insulae* are known to have been built with significant use of wood and mud construction, especially in their upper sections, rather than the sturdy brick and concrete work familiar from surviving *insulae* in Ostia.

There are many attestations to the shoddy quality of the average Roman *insula*, and some awareness of the reality of Roman apartments is necessary in order that the engravings of the Marble Plan conjure an appropriate image in the mind of their interpreter. The fear of one's dwelling actually collapsing was real in Rome, where one often slept "with the beams in ruin above," and the extraordinary situation was contrasted

³⁰ See Packer (1971), the basic descriptive reference on Ostian *insulae*, and Riemann (1975) for commentary on Packer's work. Hermansen (1981) provides important interpretive treatment of the Ostian apartment buildings. Frier (1977) considers the legal, literary, and archaeological evidence to reconstruct the apartment rental market of early Imperial Rome.

³¹ e.g. Nash (1944), pp. 23-5, presents the *Casa di Diana* from Ostia as representative of apartments in Roman towns. Packer (1971), p. 77, warns against the incautious use of Ostian *insulae* as models for those of Rome: "It is dangerous to assume that regular plans [on the Marble Plan] should be read invariably as brick-faced, concrete, vaulted Ostian structures. Literary evidence from contemporary authors suggests that they should not."

³² Frier (1980) discusses the evidence (especially the legal evidence) regarding landlords and tenants in Imperial Rome.

³³ Martial, *Epigrams*, 4.37, complaining that he has to hear bragging about these assets too often.

³⁴ Aulus Gellius 15.1.3., as they watch an apartment burn.

with the more sensible situation in towns outside the metropolis.³⁵ And this was not just the exaggeration of satirists. An entire apartment building once collapsed right into the adjoining Forum of Trajan.³⁶ These *insulae* were built high on “pipe stems” since these were such inexpensive constructions which brought in such high rents; they brought excellent profit especially when cheaply built.³⁷

Seneca observed that it was fortunate that underpinners worked for so little, since their service was vital. The underpinner “props up our tottering house, and with great skill keeps erect a group of buildings that are showing cracks at the bottom. Yet a contract for underpinning is made at a fixed and cheap rate.”³⁸ It may have been fortunate that underpinners were available inexpensively, but the need for them attests the poor construction of the buildings they fought to keep standing. Juvenal says that rather than erecting dependable structures, “it’s cheaper for the landlord to shore up the ruins, patch up the old cracked walls, and notify the tenants that they can all sleep secure...though the beams are in ruins above them.”³⁹ It was a commonplace that walking along the streets a pedestrian in Rome would pass the walls of *insulae* which were typically crumbled, cracked and out of line.⁴⁰

Vitruvius discusses the cheap construction used typically in such tenements: “I could wish that walls of wattlework (*opus craticum*) had never been invented. For however advantageous they are in speed of erection and for increase of space [vertically], to that extent they are a public misfortune, because they are like torches for kindling.”⁴¹ He goes

³⁵ Juvenal 3.190-2. Juvenal, in his third satire (against the city of Rome) bemoans the plight of those who must live in the shoddy *insulae*.

³⁶ As noted by Symmachus (37) as some local news in a letter to a friend.

³⁷ Juvenal 3.193: “*tenui tibicine*,” the literal reference being to “a slender flute-player,” meaning the props were like flutes.

³⁸ Seneca, *Ben.* 6.15.7-8, discussing what people should be grateful for.

³⁹ Juvenal 3.194-196, “*nam sic labentibus obstat vilicus et, veteris rimae cum textit hiatus, securos pendente iubet dormire ruina.*”

⁴⁰ Seneca, *Ira* 3.35.4-5, contrasting the foulness of the street scene with the refinement within an upper-class home.

⁴¹ Vitruvius 2.8.20, discussing different kinds of wall construction, and why mud brick should be banned within the city.

on to discuss the invariable tendency of the wood in these walls, due to their absorption and release of moisture, to swell and contract, and cause cracks in the walls, in spite of the pleasing plaster that could cover over their insubstantial construction just as it could cover over sturdy brick. This same deceptive facing covered walls of soft rubble construction (*opus caementicum*).⁴² Even the architect is discussing these buildings as crumbling wrecks; this is certainly not a lampooning exaggeration. The rich man's *domus* was envied for the simple fact that it was not in danger of collapsing.⁴³

The *insulae* were also extraordinary fire hazards, and would have been banned if they were not so profitable for those of influence.⁴⁴ To fear your apartment house burning down was common. The apartments highest up were the poorest and most dangerous, since the inhabitants were most likely to be trapped there in a fire.⁴⁵ The rich man was also envied for a dwelling in which he did not need to fear conflagration.⁴⁶ Aulus Gellius remarks casually on a huge conflagration of high-rise *insulae*, which he and his friends observe from a nearby hill. To them, it is an occurrence so frequent as to excite only detached financial musings.⁴⁷

The upper class could afford to overlook the hazards and miseries of *insula* living, and even assure themselves that the happy citizens of Rome who lived in the uppermost floors enjoyed "fine views over the city to the utmost advantage," in buildings which really were, after all, despite their construction, "excellent dwellings without hindrance."⁴⁸ Cicero, an

⁴² These were rated by assessors as depreciating 1/80 of their construction price per year, being regarded as able to last no longer than 80 years, while sturdy brick walls are rated as good as new indefinitely. (2.8.8). The brick buildings still standing to multiple stories in Ostia attest to the grounds for this confidence in Roman brickwork.

⁴³ Seneca *Ben.* 4.6.2, describing the things that a rich man should be grateful for.

⁴⁴ Juvenal 3.197-207 and later comments sarcastically on the commonness of residential fires in Rome. The poor dispossessed by fire had little or no recourse; the rich might be helped out so generously by sympathetic friends that he could come out significantly better off *after* the fire destroyed his home.

⁴⁵ Juvenal 3.200-202.

⁴⁶ Seneca, *Ben.* 4.6.2, enumerating the things that a man with a nice house should be grateful for.

⁴⁷ 15.1.2-3, in an anecdote about how great it would be for the constantly-burning city of Rome if wooden architecture could be effectively fireproofed.

⁴⁸ Vitruvius, 2.8.17, saying about all he is willing to say regarding the uncomfortable subject of low class and undignified *insulae*. Vitruvius discusses manifold aspects of architecture in his lengthy books on the discipline, but prefers to gloss over one of the most common forms in the city...because it was in fact so 'common,' and beneath the dignity of a noble architect to be concerned with such ignoble things.

aristocrat and casual landlord, dismissed the collapse of properties he owned as “not even a nuisance to me. Thanks to Socrates and his philosophy I am unconcerned about such nothings.” Two of his shops had entirely collapsed in ruin, while his others were cracking and crumbling even as he wrote. “Even the mice are migrating,” he laughs in his letter to a friend. In fact Cicero was complaining bitterly about what these setbacks were costing him, but his concern was solely with his money, not with his tenants. Collapses were joking matters about insignificant people to rich landlords, but they were miserable realities for the *inquilini* who lived in these constructions.⁴⁹

In Rome, rental housing took many forms, and these were inhabited densely. Servants of the owner oversaw these *insula* complexes.⁵⁰ Apartment flats, *cenacula*, were often subdivided to multiple tenants and families, as provisions in Roman law clearly indicate.⁵¹ The division of living space into very small units was due to the extraordinarily high price on rental residences in ancient Rome.⁵² Most people lived in one or two rooms (*cellae*), whether these were components of flats, individually rented rooms in rooming-houses (*deversoria*), or the lofts or back rooms of shops (*tabernae*). Long-term tenants rented *cenacula*, while short-term city tenants (*deversores*) might rent rooms in an inn (*deversorium*), or a *taberna*.⁵³ *Taberna* is commonly translated as “shop,” but in Roman use this term was a catch-all, and commonly referred to shops, shop-dwellings, and rooms used exclusively as dwellings, whether they were inns or

⁴⁹ *Inquilini* was the Latin term for short- or long-term tenants in any form of rented dwelling.

⁵⁰ Stambaugh (1988), pl. 178, Frier (1977), p. 28. n. 8; Stambaugh (1988) 361 n. 27 lists inscriptions about this.

⁵¹ The *medianum* apartment was characterized by a shared hall (the *medianum*) serving typically 3-5 rooms. Roman law made every tenant in a *medianum* apartment liable for objects illegally thrown into the street from the *medianum* itself (Ulpian, *Dig.* 9.3.5.1-2).

⁵² Frier (1977), p. 27, notes the universal agreement of the ancient sources on the very high cost of housing in the city of Rome.

⁵³ Frier (1977) and (1980) assesses the terminology of the rental market in early Imperial Rome, and observes that its categories were not rigid; certain terms were interchanged with some freedom. He also notes that Roman inns could be more like “flop-houses” than typical modern hotels in character, often preparing food for the tenants and accommodating a variety of short- and long-term residents.

rented as long-term residences.⁵⁴ It should be understood that *tabernae* can have various natures, residential, commercial, or both at once. *Tabernae*, as well as *deversoria* and *cenacula*, were found in Rome in many forms, in many configurations, and incorporated into buildings of various types. As places offering residence, these assorted forms may all come under the heading of *insulae*, and the Marble Plan offers substantial evidence to indicate the variety of dwellings in Rome.

The Roman *insula* preserved near the church of Santa Maria in Aracoeli (the “Aracoeli apartment house”) offers an illustration of an *insula* apartment block in Rome, even though only one flank of this building is preserved (Fig. 3.2).⁵⁵ The very fact that it is preserved indicates that it was to some degree unusual and built more strongly than common apartment buildings of the ancient capital.⁵⁶ The ruin displays the vertical stratification characteristic of Roman tenements. The ground floor is occupied by a row of individual shops with lofts, just as appear by the hundreds on the Marble Plan. While the ground floor was desirable living space, for its ease of access and its closeness to garden or courtyard space, the rents available from shops often meant that the best living quarters in an *insula* were located on the second floor. The Aracoeli apartment house demonstrates this in the two spacious apartments with large rooms that appear on its second floor. Even a poet of repute such as Martial lived in a flat up “three flights of stairs, long ones too!”⁵⁷ Upper floors in *insulae* were only accessible by stairs, and so they became less desirable

⁵⁴ As Frier (1977) and (1980) has pointed out, based on his study of Roman literature and law. Cicero (*Inv.* 2.4.14-15) had a *taberna* rented out to individual *deversores* (tenants); in Horace *tabernae* are the dwellings of the poor (*Carminae* 1.4.13, *AP* 229); Ulpian uses *taberna* to refer to any multiple residence (*Digest of Roman Law* 50.16.183). Another word for inns was *meritoria*, and this also is used loosely to refer to the dwellings of the poor (Juvenal 3.234, complaining of the insomnia that plagues the poor in lowly lodgings), as is *hospitium*--an inn (in Petronius, Pliny, and the *Digest of Roman Law*) or residence of the poor (Juvenal 3.166, lamenting that lodging is of miserable quality while expensive in the city of Rome; Frier collects additional references supporting his argument that there was substantial tenancy on short-term leases for the very poor in Rome).

⁵⁵ See Stambaugh (1988), pp. 176-178.

⁵⁶ Lugli (1942), p. 210, points out that the humbler dwellings have of course disappeared with little or no trace.

⁵⁷ Martial, *Ep.* 1.117, where he suggests that it is too much trouble for an acquaintance to come all the way up to his flat.

with altitude.⁵⁸ At the same time, the quality of construction diminished with increasing height, as lighter materials such as wood and mud-brick were employed instead of stone, concrete and baked brick. The third floor of the Aracoeli apartment exhibits corridor flats, as will be seen in examples below from the Marble Plan. These could be made into smaller or larger units as available tenants warranted, by the addition or subtraction of partitions or doorways. The uppermost floors were built of very insubstantial materials, and in the case of the Aracoeli *insula* they are not well preserved for this reason. In these uppermost floors were single-room 'cells' (*cellae*), "near the tiles and the pigeons."

Cellae do not show up on the Plan, of course, but must be imagined hanging above much of the city. Literature provides a few references to these small individual cells to complete the picture missing from the Marble Plan. The image is of fairly desperate lodging, even for people who were such as to be the acquaintances of a popular writer. Not only the 'unwashed masses' lived in these places. The *cella* was not lodging only for the abnormally poverty-stricken, but for many thousands in the metropolis. Juvenal's friend Codrus had an attic *cella*, a one-room dwelling containing only a bed, a sideboard, six jugs, a tankard, a small broken sculpture, and a box of worn Greek literature scrolls.⁵⁹ All this was destroyed in a fire, leaving him with nothing at all and no recourse. Martial makes several references to single-room *cellae*, including that of Santra, a man desperate for invitations to free dinners. He lives up two hundred stairs in a *cella*.⁶⁰ Another acquaintance, Gargilianus, lived in a *fusca cella*, a "dark little cell."⁶¹ Life in Rome for

⁵⁸ Modern elevator technology has brought about the inversion of this vertical class stratification in America, where today the penthouse or uppermost apartment is considered the most desirable.

⁵⁹ Juvenal 3.203-211, wondering why he and everyone else tolerates the insane miseries of living in Rome (while admitting that the games and spectacles were a powerful draw).

⁶⁰ Martial, *Ep.* 7.20, describes Santra as a miserly soul because he not only hoards food at a free dinner (like many must have done), he takes so much back to his little *cella*, perched high up within an *insula*, that he can sell some of the extra the next day. Martial is acting as a satirist of Roman foibles here, and descriptions from both this author and Juvenal must be evaluated with some caution. However the cumulative picture is consistent, and particularly credible when it is considered that the view of the satirists on the poor quality of *insulae* agrees with that of Vitruvius the architect, Cicero the landlord letter-writer, and Seneca the moralist.

⁶¹ Martial, *Ep.* 3.30, wondering how Gargilianus can even afford this most meager lodging.

many thousands was not the spacious, sturdy, and comfortable experience that has sometimes been imagined on the basis of Ostian *insulae*. The Aracoeli apartment, together with Roman legal and literary writings, provides a basis for imagining the upper residential floors of Rome.

The first types of dwellings to be considered here will be some of the humblest, single rooms that commonly doubled as shops. Romans used many buildings for multiple purposes, and at the lowest economic level very meager spaces served both commerce and residence, inextricably entwined. Accordingly, at this level some discussion of the commercial nature of these residences is appropriate. More purely commercial structures will be discussed later. This study will present the different units that make up basic housing, and consider the variety of configurations in which those elements occur. Discussion will then proceed to more elaborate residences, beginning with the relative luxury (to small shop-dwellers) of a back room, moving to shop-flats, then larger apartments and small houses. Finally this study will address private houses of the traditional atrium form, well-known in many configurations from Pompeii and Herculaneum.

Tabernae

As the Marble Plan attests with hundreds of examples, one of the most basic structural units in the city of Rome was the single-room *taberna*.⁶² *Tabernae* are the most commonly appearing architectural type on the Marble Plan. The Latin *taberna* is the origin of the English word “tavern,” and while food and drink were available at some *tabernae*, the architectural type served a wide variety of minor commercial purposes as the basic “shop” in the Roman world. *Tabernae* were shops of every description, selling the infinite variety

⁶² On the topic of Roman *tabernae*, see Girri (1956), who provides an extended treatment of the subject. Calza (1937) offers a brief introduction illustrated by ancient art of various kinds of shops.

of supplies and handicrafts available in the metropolis; cobblers, booksellers, weavers, silversmiths and dozens of other specialties sold their wares to customers from single-room shops lumped together under the catch-all term *tabernae*. Accordingly it will be best to retain here the Roman word for the structure rather than resorting to an English word which does not capture the full range of meaning in *taberna*.

The basic shop is a single room opening directly onto the street, which appears to have sufficed for most applications as it is the most numerous kind seen on the Plan.⁶³ It could be furnished with a lunch counter, in which case it was a *popina*. Or any variety of wares could be marketed from such stalls. *Tabernae* had wide doorways, which doubled as 'display windows' to let in light and to make wares visible to passing pedestrians.⁶⁴ These doorways were closed with sliding shutters of a type preserved at Pompeii and Herculaneum. The sliding shutters were seated in a distinctive guttered threshold. This same kind of threshold is seen at Ostia, and Rickman uses it to distinguish retail shops from rooms used for storage or residence, which were more likely to have pivoting doors, usually in two halves hinged on either side.⁶⁵ This information is not available from the Plan, but most of the *tabernae* face onto a street where pedestrian traffic flow is an issue, and the sliding doors are designed not to impede this flow while exposing a broad opening to the light and air, and to potential customers (and not covering over the neighbor's shop, as large pivoting doorleaves would do). This was a standard Roman design, and *tabernae* on the Marble Plan should in general be restored with wide street-front openings and Pompeiian-style wooden sliding doors.

Another feature common to many *tabernae* that is invisible on the Marble Plan is a mezzanine floor, or loft, reached by a small staircase in the back of the room, of which the lower few steps were usually in masonry and the rest built of wood. This loft

⁶³ The basic one-room unit is Girri's type 1 at Ostia.

⁶⁴ Such doorways as measured at Ostia by Packer (1971), p. 21, are typically about 9 ft. wide (3m), never wider than 16 ft. (5m).

⁶⁵ Wallace-Hadrill (1994), p. 118, discusses the Roman cultural connotations of the 'noble' restrained narrow door, and the 'sordid' wide doorway, open to the common public without discrimination.

arrangement is especially characteristic of the *tabernae* of Ostia, and is also known in some of the few preserved *tabernae* in Rome, in the ground-floor shops of Trajan's Markets.⁶⁶ The mezzanine floor was normally equipped with a single window to the street, and would have another window in the back onto a courtyard or alley if possible (Figure 3.3). The loft in this configuration serves as a domestic space apart from the commerce of the *taberna*, affording greater comfort for the inhabitants. While this loft was a very common component of *tabernae*, back stairs never appear on the Marble Plan. Only stairs leading to upper floor areas more significant than a loft are ever recorded on the Plan.⁶⁷ Therefore the lack of a back stair symbol must not be taken to imply the absence of a loft. This leaves the matter of lofts ambiguous from the Marble Plan evidence, but it should be presumed that a large percentage of shop-dwellings probably had lofts.

Tabernae were also dwellings, in addition to serving commercial purposes.⁶⁸ The sheer number of *tabernae* on the Plan would suggest this conclusion; they seem to be everywhere, in rows and groups and in corners, along the merest alleys and widest avenues, densely filling areas both grand and obscure; almost the entire city appears to have been thickly furnished with these rooms. In many places they line both sides of the streets (Fig. 3.4). In all, they seem too numerous to have been shops exclusively.⁶⁹ Early researchers usually accepted the idea that some *tabernae* were shop-dwellings, providing cramped residence among the wares.⁷⁰ The persistence of the *taberna* form into twentieth-century Italy offered ready examples of the coexistence of business and residence in the same room.⁷¹ Ancient remains attest that the wide shutter doors that closed a shop off for the night sometimes had normal-sized (about 4.5 ft., or 1.3m

⁶⁶ The *taberna* with loft is Girri's Type 2 at Ostia

⁶⁷ The space under stairs of any kind was called *subscalaria*, and was typically used for storage or, often, for latrines. There was insufficient space available in most buildings to let even an odd space go unused.

⁶⁸ Ziçans (1941) includes *tabernae* in his discussion of dwellings on the Marble Plan.

⁶⁹ Staccioli (1959) is quite struck by the number of *tabernae* on the Plan.

⁷⁰ An exception was Calza (1917) who believed that shop owners rarely lived in their shops.

⁷¹ Ziçans (1941) records his observation of a cobbler carrying on his business in the front of such a shop while the shopkeeper's wife tended to their child in the back.

wide)⁷² ‘night-doors’ built into them, showing that access was still required outside of commercial operation hours, suggesting that the modern analogs were appropriate models for ancient *tabernae* in mixing business and residence. However, there was scholarly resistance to the idea that some *tabernae* were exclusively residential.⁷³ That many people lived in single rooms is clear from literary references, but these were usually thought of as occupying the upper floors of *insulae*. Staccioli felt that the sheer number of *tabernae* on the Plan argues for the interpretation of some as exclusively residential.⁷⁴ Ancient literary evidence, as has been mentioned above, supports the identification of some *tabernae* as dedicated residences.

Tabernae which include service counters with built-in jars for food or wine are one of the most familiar features in the excavated streets of Pompeii and Ostia.⁷⁵ The function of these *tabernae* is clear enough, but in lieu of such obvious clues, it can be difficult to determine the ancient use of various *tabernae*, since the same architectural form served the bookseller as well as the cobbler and the carpenter, and nearly every other kind of merchant. This problem is particularly acute on the Marble Plan, where there are no *Realien* whatsoever to associate with the ancient use of any individual *taberna*. It must be accepted as impossible to divine the specific purposes of any of these shops, but there are still useful observations to be made with the existing evidence from the Plan. While the individual purposes of the *tabernae* must remain obscure from the evidence of the Plan, it is possible to gain some control over the large amount of *taberna* information contained therein by discerning and classifying types of their configurations and occurrences, based on arrangements and contexts. This is an important first step towards a better

⁷² Packer (1971), p. 21, measured residential doors at Ostia and found an average 4.5 ft/ 1.3m width for exterior residential doors. Interior doors were an average of 3.5 ft/ 1.0m wide.

⁷³ Girri (1956), pp. 37-43, for example, stressed the importance of shops as dwellings, but believed that all *tabernae* had at least some commercial element.

⁷⁴ Staccioli (1959).

⁷⁵ These are often referred to as *thermopolia*, but *popinae* is the more correct term (Foss [1994], p. 122).

understanding of the *taberna* as part of the Roman urban context; its variety and ubiquity must be appreciated as parts of the matrix that made up much of the city.

Several researchers have devised classification schemes for *tabernae*.⁷⁶ Staccioli began to apply this work to the Marble Plan in 1959, basing his study particularly on the work of Girri, who had worked out a scheme for the *tabernae* found at Ostia. Staccioli found very strong correspondence between the types occurring in the two cities, although there were some forms that seemed to be unique to Rome. Ostia's urban fabric bore close resemblance to that of Rome in many ways, as the *taberna* types attest, but on the other hand Ostia is not an urban clone of Rome (as some have believed), a point which will be developed in Chapter 4.

For the study of the *tabernae* the plan offers many of examples, in many contexts and in many configurations. *Tabernae* most often appear in rows of identical units, and can be seen lining the street frontages of many building blocks and public monuments, as well as forming the entire ground floors of independent freestanding buildings. They occur grouped around courtyards, lined up back-to-back, flanking alleys, and inserted into a wide variety of spaces, from the frontage on either side of a house's street door, to every sort of irregular space left in the city's urban fabric by the ground plans of larger monuments and buildings. There is, in fact, a remarkable diversity of the *taberna* architectural type, so much so that they seem almost a chaotic and infinitely variable ether

⁷⁶ *Tabernae* have prompted the devising of numerous classificatory schemes throughout the twentieth century: Calza (1917), Girri (1956), Staccioli (1959), Boethius (1960), Packer (1971), Meiggs (1973), Wallace-Hadrill (1994) and Foss (1994) for example. Carettoni applied some classification to the *tabernae* of the Plan (*PM*, p. 204). Most of these involve Roman numerals and a small number of categories based on 'optional features' or configurations. None of these numeral schemes has particularly caught on in the literature (though Girri's tends to get some recognition), and so I have opted for a simple descriptive approach. *Tabernae* form a highly variable architectural type that could be combined and configured in many ways, and it can be hard to draw useful lines of division between them. I have here tried to present the options that can occur in any configuration, then moving to the description of configurations as they appear to fall into natural groups. It should be understood that given the degree of uncertainty that attends the interpretation even of archaeologically-investigated *tabernae*, the interpretation here of evidence on the Marble Plan is often meant in general terms only.

in which the grand and ordered monuments of the city are manifest, and through which the streets are cut.

Single rows

The most common arrangement of *tabernae* is in rows, facing streets, so that they could take maximum advantage of the market potential of customers passing by.⁷⁷ The earliest *tabernae* built as such in the Roman Forum (the *tabernae veteres* and *tabernae novae*, or Old Shops and New Shops) took the form of single freestanding rows, and this form persisted into Severan Rome, as attested by examples from the Marble Plan (Fig. 3.5 A and B).⁷⁸ The form is known from Ostia as well (Fig. 3.5 C).

That some single-row structures had more than one story is confirmed by the staircase symbols appearing in some of them (e.g. in the examples appearing on frs. 27b and 538b, and in the example from Ostia shown in Fig. 3.5 C). It is likely that most had lofts. The staircases may indicate access to upper-floor apartments for more than one room, for a more prosperous shop owner or for someone who was also acting as the agent of the building owner, who therefore might have more privileged accommodations at the expense of loft space over adjoining *tabernae*. Where there were arcades fronting the *tabernae*, additional floor space would be available on the second story for residential apartments.

The early freestanding single-row *tabernae* in the Roman forum were given balconies on their second story by a certain Maenius, who became eponymous for these balconies in the term *maeniana* (Fig 3.6).⁷⁹ Spectators watched gladiatorial games and events in the forum from these balconies, and such *maeniana* became “a standard feature of Italian

⁷⁷ The single row configuration was Type I for Boethius (1960) and IA for Packer (1971).

⁷⁸ Livy (1.35.10) and Dionysius Halicarnassus (3.67.4) describe these early components of the Forum, attributed in their earliest form to an era before the Roman Republic, in the age of the king Tarquinius Priscus. See Richardson (1992), p. 375, for collected references to these *tabernae* and others built in the Forum, which tended to specialize in merchants of the same type, such as moneychangers or butchers.

⁷⁹ As recorded in Festus, 120L.

towns.”⁸⁰ True upper stories would very often have balconies, while a loft level would have only a window.⁸¹ In cases where an upper story is attested for any part of such a structure, it may be assumed with confidence that the entire row of *tabernae* bore at least one upper story, given Roman design sensibilities.

Adjoining houses

Besides occurring as freestanding structures, *tabernae* were commonly integrated into or attached to other constructions. Street frontage was a valuable commodity, and where the circulation of potential customers warranted a *taberna*, the opportunity to provide one was rarely missed. Consequently it is virtually standard even for very upper-class dwellings in Pompeii to rent out shop space on their street frontage.⁸² Shops adjoining private houses may be seen on the Marble Plan as well (Fig. 3.7). In the pictured examples, they appear flanking either side of the *fauces* entrance halls to traditional atrium houses (fr. 11e), and almost surrounding an irregular house with a peristyle court (11ab).

Adjoining monumental buildings

The rents from street-front *tabernae* were desirable to the state as well as to private property owners, and *tabernae* were accordingly attached to the frontages of monumental public buildings as well.⁸³ The Marble Plan, for example, includes depictions of *tabernae* around the perimeters of the Templum Pacis, the Porticus Liviae, and the Circus Maximus, among others (Fig. 3.8). It was in fact in the *tabernae* of the Circus Maximus

⁸⁰ Richardson (1992), p. 376. Vitruvius 5.1.2; and Isidore *Orig.* 15.3.11 attest that these were common structures. Cicero (*Acad.* 2.70) comments on them as amenities for protection from the summer sun and for the benefit of spectators.

⁸¹ Façade arcades might carry balconies or the weight of upper floors; wooden balconies might be carried on projecting beams from upper floors (Packer (1971), p. 32ff).

⁸² Pirson (1994) has confirmed that *tabernae* were built into some of the finest mansions of Pompeii (e.g. the grand *Insula Arriana Polliana*, VI.6), as part of their earliest design structure, not as later additions.

⁸³ Ulpian refers to *tabernae* on public land that could be leased from the state (*Digest of Roman Law* 18.1.32).

that the devastating fire of A.D. 64 broke out.⁸⁴ Attached *tabernae* are often used to provide a straight street facade, disguising architectural irregularities or misalignments behind them. These *tabernae* get distorted out of their ideal square or slightly oblong plan in the process, and shops of various sizes result.

Back-to-back rows

Where there was a high degree of pedestrian circulation, a natural extrapolation from the single row was to have *tabernae* adjoining other *tabernae*, forming a back-to-back double row.⁸⁵ The Marble Plan present numerous examples (Fig. 3.9). Virtually identical structures are known from Ostia, both freestanding and as components of larger structures (Fig. 3.10). Most back-to-back rows on the Plan appear to have been no taller than two stories (presuming lofts), judging from the absence of stairs illustrated in them. Two examples that do contain stairs (on fr. 27ab) have multiple stairs to the upper apartments.

With two opposite faces

The Plan shows many *tabernae* that have entrances on two sides opposite each other (Fig. 3.11). These are sometimes more elongated *tabernae* (e.g., frs. 40c-g, 281, 544). The explanation of this phenomenon is suggested by excavated structures, where archaeological finds and a higher level of information on structural detail show that *tabernae* could have a commercial face and a residential face (as in structure III, iii, 1 at Ostia, Fig. 3.12).⁸⁶ Archaeologically these differences can be determined particularly by door sizes. A wide sliding door is commercial, a narrow hinged door is a residential entrance (Fig. 3.12). On the Marble Plan this distinction becomes a subtlety obscured by

⁸⁴ Tacitus, *Ann.* 15.38, records the origin of the fire amongst the shops, with their 'inflammable wares.'

⁸⁵ The back-to-back row of *tabernae* is Type II for Boethius (1960) and IB for Packer (1971).

⁸⁶ The *Sede degli Augustali* (Ostia V, vii, 1) features *tabernae* with opposite residential and commercial faces occurring on single rooms, as often seen on the Marble Plan.

the Plan's level of simplification; doorway sizes are not differentiated. However, with the knowledge of similar cases it becomes easier to interpret bi-facial *tabernae* as structures with a commercial aspect on one side and a residential aspect on the other. In such bi-facial examples it is not uncommon for one side to face a major street while the other faces a narrow access alley or an enclosed court, which also supports the dual aspect interpretation (e.g., frs. 37Aabc, 165d, 433, 496-497). What has become invisible in the Plan depictions of these *tabernae* are the wooden partitions that probably provided some separation between the commercial and residential spaces in many instances. Where space allowed such segregation of activities, the custom of lofts and back rooms attests that the Romans preferred to live separate from their commercial space.

It seems probable that rear doorways existed but were not drawn for many *tabernae* on the Plan, as numerous illustrations of *tabernae* around courts do not show the *tabernae* as having any access to these courts, which they certainly did. It may be that the "*taberna* with two opposite faces" is simply an engraver's error, including detail (the rear residential doorway) which was meant to be omitted in the Plan's standard scheme.

With back rooms

Another common configuration of the *taberna* is the addition of a back room.⁸⁷ Examples found on the Marble Plan find counterparts in the excavations of Ostia (see Fig. 3.13). Such a back room could serve several purposes. In *tabernae* without a loft, it would be the set-aside residential space of the unit--like the loft, more private and secluded than the front commercial space. In *tabernae* with a loft, the back room could be additional living space or additional work space, such as a production area for goods sold out of the front room.⁸⁸

⁸⁷ *Tabernae* with back rooms are Type 3 for Girri (1956) and IC for Packer (1971).

⁸⁸ *Tabernae* with both back rooms and lofts are common enough at Ostia that Girri (1956) assigned them their own category, his Type 4.

One of the most desirable commodities for Romans living in *tabernae*, whether in residences or shop-dwellings, was open living space, access to light, air, and garden greenery. Such luxuries were flaunted in the atrium houses of the rich, with great private courtyards and peristyle gardens, and even luxurious dwellings often stretched the impression of open space wherever possible with dimensional or garden illusion wall paintings. One could not have too much space or greenery, and these amenities were desired by every economic level. In the intensely crowded city of very high land values, however, space was one of the luxuries that the average citizen could least afford (which of course gives rise to the phenomenon of *tabernae* as dwellings in the first place).

One way that *inquilini* living in the *tabernae* could attain access to greater domestic space was by sharing it. The experience and amenities offered by a true open court, even if it had to be shared, outweighed the appeal of a smaller amount of space that could be completely private. Another advantage of a court over individually parceled-out ground space was that court space offered light and air, and perhaps a view of greenery, to all floors of a building. Because the *tabernae* on the Plan are only the ground floor plans of structures commonly over five stories high, the use of space for common courts makes even more sense. The frequency of court space in Rome's domestic architecture underlines the need for access to light and air (due to the poor quality of lighting technology, for instance) and the great desirability of court or garden space in the densely packed capital.

Accordingly, *tabernae* arranged around a court form probably the most common recognizable 'module,' or pattern, in the non-monumental matrix of the Marble Plan. In respect to this particular architectural form the value of the Plan for the study of Rome becomes especially apparent, because the form is not known at Ostia.⁸⁹ The frequency of this courtyard design, so distinctive of the capital, demonstrates one of the aspects of

⁸⁹ Staccioli (1959) comments on the lack of excavated Ostian comparanda for this configuration of *tabernae*.

Rome's unique urban structure that cannot be extrapolated from other Roman cities, and underlines the importance of the Plan for study of the urban form of Rome itself. Further, it is only through typological analysis that this form can be identified and recognized as a common architectural genre at Rome.

Tabernae with associated courts occur in almost every possible configuration on the Marble Plan. The specific arrangements vary, but the basic principle of small units and large court space is consistent. This court space was always enclosed for privacy; adjoining courts were separated by walls if not entirely surrounded by *tabernae*.⁹⁰ These courts would take whatever shape available property dictated, and the Plan exhibits a diversity of regular and irregular shapes, from squares to rectangles wide or deep, to rhomboids and irregular polygons.⁹¹

Rear courts

A rear court was especially common (Figures 3.14 and 3.15). Such a court would often be defined for only three or four *tabernae* (frs. 10gh, 108a, 202, 421ac, for example), but could serve as many as nine (frs. 184, 338). The Marble Plan depictions normally make it appear as if the *tabernae* have no access to these courts; what is certainly occurring is the omission of small doorways in the back of the shops, which opened onto the courts. This was not an engraver's error, but the standard simplification for the Marble Plan, as nearly all *tabernae* adjoining courts are depicted this way. It should be presumed that the original survey documents from which the Plan was abstracted contained accurate notation of these smaller doors, since in a few examples they are shown (creating the '*tabernae* with two opposite faces' configuration). Some courts are shown

⁹⁰ Fragment 16b (Fig. 3.15) illustrates doorways in the enclosure walls of two courts, confirming that the lines defining the courts are not mere property lines (as has been shown in Chapter 2, we would not at any rate expect any boundaries not rendered into built form to show up on the Marble Plan, due to the exclusive structural focus of the architectural recording tradition).

⁹¹ While many courts were rectangular, fragments such as 10a-d, 22b, and 421ac illustrate the irregular shapes that often occurred.

with colonnades (fr. 11a, and two examples in fr. 101), and fr. 138a has an arcaded walkway along one side.

On two or more sides of a court

Inquilini sharing their court space with more numerous neighbors had *tabernae* lined up along two or more sides of a court. Courts with *tabernae* on two sides could have *tabernae* on opposite (Fig. 3.16) or adjacent sides (Fig. 3.17), either configuration being equally common, the arrangement depending on whether the property was on a corner. *Inquilini* worse off yet had to share their court with a larger number of neighbors, whose dwellings almost or completely surrounded the court (Figure 3.18). Fr. 165d shows a large court entirely surrounded by *tabernae*. One side is made up of a back-to-back row of *tabernae*. It seems probable that the single rows of *tabernae* were shop-dwellings, while the row facing inward may have been exclusively dwellings.

Facing a court

Purely residential *tabernae* often faced in on their court, there being no need for them to open onto the bustle and noise of the street (Figure 3.19 and 3.20). These might be purely residential structures, or surrounded in turn by *tabernae* which did face the street. The Plan often shows the roofline (fr. 140, 165c, 437, 505b) or the columns (fr. 10h,aa,o; 95abd; 350b; 449; 484), or both (fr. 10n, 347) of the covered portico that typically ringed these courts to provide shaded sitting and walking space. Where these do not appear, the portico should often be presumed anyway. The frequency of porticoes indicated for the courts surrounded by inward-facing *tabernae* suggests that dedicated residential spaces, facing inward on a private court, were a desirable luxury, and that tenants who could afford this level of privacy could afford the additional amenity of a portico more often than poorer tenants who only had access to a court through a small rear door in their shop, of the type not usually illustrated on the Plan.

Tabernae facing inward on a court are often indistinguishable from the *cubicula* (bedrooms) of atrium houses, and it can be difficult or impossible to distinguish apartments from houses in some cases, especially when omitted doorways confuse the connection of spaces (e.g. fr. 95abd). Where multiple entrances to the court appear, where there are more than four rooms in a row, or where the individual rooms are larger than typical *cubicula*, the identification as *tabernae* is more likely (e.g. frs. 140, 165c, 347). An excavated example from Rome, the *Horrea Agrippiana*, shows that *tabernae* facing in on a court could even be retail shops. The thresholds in this *horrea* (a warehouse, according to its name) are for sliding shutter doors typical of retail *tabernae*, not the pivot doors normally found in warehouses.⁹² Several examples on the Plan seem to be *tabernae* ‘bazaars’ rather than dwelling courts (Figure 3.21).⁹³ Where the courts are highly connected with the street (fr. 10m), or where they are arcaded and seem too large for residential courts (frs. 345, 548ab), the identification as bazaars is suggested. In spite of the confusion of use categories that occurred in the untidy reality of ancient Rome, typological plan sorting at least clarifies the different classes of structures.

Backing onto corridor or alley

Where space did not permit a court, *tabernae* often backed onto a corridor or alley, for access to a modicum of light and air via windows or minor doors that do not appear on the Plan (Figure 3.22).

⁹² Rickman (1971), pp. 89-96 discussed the *Horrea Agrippiana* in detail. The term *horrea* means “warehouse” or “storehouse,” but the Roman application of this word was no more exact than many other architectural designations (cf. the multiple meanings of *taberna*), and evidence shows that *horrea* could mean anything from a large warehouse facility designed specifically for the bulk storage of goods (the *Horrea Lolliana* is so labeled on the Marble Plan), to a retail shopping bazaar (as the *Horrea Agrippiana*, so titled in an inscription, seems to have been), or a high-class storage facility combined with residences on the upper floors (the *Horrea Epagathiana et Epaphrodita* in Ostia, also specifically titled *horrea* in an inscription).

⁹³ This was the interpretation of Staccioli (1959).

Apartment Flats: *Cenacula*

Apartment flats, or *cenacula*, could take many forms, and a single type could be occupied by one family or multiple tenants depending on circumstances.⁹⁴ Further, while some *cenacula* have distinctive forms, like the *medianum* apartment known so well from Ostia, many *cenacula* took forms that, in plan, look similar to buildings used for other purposes, such as storage or retail. In spite of all this, the Marble Plan offers a number of examples of structures that may be identified as *cenacula* with varying degrees of confidence.⁹⁵

Small multi-room flats

Small irregular units of only a few rooms, like that illustrated in fr. 320ab (Fig. 3.23), were multi-room flats, more elaborate than mere *tabernae* with back rooms, perhaps occupied by relatively prosperous shop owners.⁹⁶ These small irregular dwellings defy any strict classification, as they were tucked into available spaces all over the city, expanding into neighboring *tabernae* or being subdivided as changing circumstances warranted. More recognizable on the Marble Plan are apartments that present some formulaic aspects, such as corridor flats.

Corridor flats

Corridor flats are organized around a passageway which gives access to rooms which are typically undifferentiated in size. The Aracoeli apartment building in Rome preserved examples of corridor flats on its third floor (Figure 3.2). Corridor flats may also be seen in Ostia, usually on the upper floors of *insulae* since they were a lower-class form of

⁹⁴ Some of the forms of *cenacula* known archaeologically from Ostia, Pompeii, and Herculaneum, are treated in De Albentis (1990).

⁹⁵ Zığans (1941) identifies several small flats in his discussion of dwellings on the Marble Plan.

⁹⁶ The small flat in fr. 320ab corresponds exactly to the Type IIB of Packer (1971), p. 8, for the *tabernae* in *insulae* at Ostia.

apartment.⁹⁷ Corridor apartments may have rooms on one or both sides of the corridor, and examples of both configurations appear on the Marble Plan (Fig. 3.24 A).⁹⁸ Fr. 33a illustrates a simple single-sided corridor flat, with *tabernae* facing out to the street and stairs leading to upper floors. Fr. 197a appears to illustrate a single-sided corridor flat reached by an L-shaped corridor, and offering access to a court roofed with a *compluvium*, a roof design that funneled water into a basin below a skylight. Fr. 139b shows a set of rooms reached through a triangular space from the street. The largest room is probably a court, with a rectangle perhaps indicating a basin or garden enclosure. Fr. 474 presents an irregular flat in which the doorways to some of the rooms have been omitted, confusing the interconnections between the rooms. However, the large rectangle defined within the irregular space is likely to be a court or garden enclosure. The component rooms of such flats could be rented out individually or in groups, or the entire flat could be leased to a single tenant, depending on its furnishings and the tenant's means. Corridor flats were no doubt extremely common all over Rome due to this adaptability, but they would normally have been placed on upper floors, indeed over many of the *taberna* structures that have been reviewed above. An Ostian example (Figure 3.24 B) serves as a reminder that while corridor flats could be very minimal accommodation indeed, ground floor units might be well-furnished, and within this type would have been a wide range of architectural refinement.

⁹⁷Frier (1977), p. 29. Examples at Ostia: the *Caseggiato degli Aurighi* (III, x, 1) and the *Caseggiato del Serapide* (III, x, 3).

⁹⁸Packer (1971) calls the form with rooms on both sides a "basilica-style apartment;" it is his Type IIE for Ostia. Examples there are the *Casa Delle Volte Dipinte* and the *Insula del Sacello* (see Packer, p. 10ff). Packer observes that some corridor apartments originally designed for wealthy tenants were later subdivided for poorer occupants, attesting the adaptability of the form. He also points out that the form resembles a small warehouse (such as that in Ostia at III, 17, 1) or a shopping bazaar (e.g. Ostia's IV, 5, 18); the adaptability of the plan makes secure identification difficult. Ziçans (1941) strongly supports the identification of the corridor dwelling type on the Plan, usefully identifying several examples, but pushes some identifications too far where the data are not clear enough (e.g. his figures 3.8, 3.9, and 3.10).

Medianum apartments

The *medianum* apartment type of Ostia is a form of corridor apartment, named for the *medianum*, a common hall giving access to several rooms (Figure 3.25).⁹⁹ The *medianum* appears as a standardized form in many instances, but it also appears in various alternate permutations. The rooms were arranged around a *medianum*, which had windows to the street. A line of two or three small cubacula ran parallel to the *medianum*, and larger rooms (*exedrae*, sitting rooms) filled one or both ends of the apartment. The *exedrae* were often given more elaborate architectural detailing.¹⁰⁰ In Ostia *medianum* apartments were often designed for single families and might occupy two stories.¹⁰¹ However, the form lent itself readily to subdividing. Several tenants might each take a single room, sharing the *medianum* for cooking and eating, and also sharing the kitchen and latrine if these were available. The *medianum* form is specifically mentioned in Roman law, and almost certainly occurred at Rome, on upper floors like most corridor flats.¹⁰² This may explain why the type has not been identified among the ground floor structures depicted by the Marble Plan.¹⁰³ The *medianum* was particularly well developed at Ostia, and seems often to have served a 'middle class' of tenants, between *tabernae* and atrium houses in status as manifest in their dwellings. In Rome, *medianum* apartments would usually have occupied the second floors of *insulae*, and this may explain the absence of the type from the Marble Plan.

⁹⁹ On the *medianum* apartment type, see Packer (1971) for architectural data, but Frier (1977) and especially Hermansen (1981), pp. 17-49, who clarify the appropriate terminology for *medianum* apartments and explain the form and its use by drawing on Roman literary and legal sources. The components of the *medianum* apartment were formerly discussed (incorrectly) using terminology appropriate to the traditional Roman atrium house.

¹⁰⁰ These rooms were not infrequently two stories tall in the finer Ostian examples. See Hermansen (1981).

¹⁰¹ Packer (1971), p. 9, lists examples of *medianum* apartments at Ostia with end rooms (*exedrae*) that occupy two stories, though he employs the terminology of *tablinum* and *triclinium* to these rooms, which Frier (1977) and Hermansen (1981) have shown to be inappropriate.

¹⁰² Ulpian refers to the legal implications of tenants sharing a *medianum* (*Digest of Roman Law* 9, 3, 5, 1-2). See Hermansen (1981), pp. 20-2 for discussion of this and related references.

¹⁰³ Packer (1971), p. 76.

'Strip Houses'

A form of *insula* ground plan that has remained common in Italy into the twentieth century is the "strip house," a narrow and deep plan responding to the high expense of street frontage.¹⁰⁴ Archaeological examples of this form are known at Herculaneum and Ostia, and the type can be identified on the Marble Plan in many fragments (Fig. 3.26). The stairs provide separate access to the higher-class apartments immediately above the shop-dwellings on the ground floor. On the Marble Plan, this type is shown without internal subdivisions, but internal divisions on the ground floor are not uncommon in preserved and modern examples of strip houses, and it should be kept in mind that partitions may well have been simplified out of the Plan's depictions, especially if built of more insubstantial materials.

Irregular Flats

Residences that were more complex than corridor flats and strip houses but not traditional atrium houses in form can be difficult to discern on the Marble Plan, but they do appear (Figure 3.27). Fr. 138c shows a set of rooms and a courtyard reached through a *fauces*, or entrance corridor, which runs between street-front *tabernae*. The *fauces* was a common feature of Roman houses, setting the residential area back from the public street. Fr. 10g illustrates an irregular residence similarly reached by a *fauces*. The largest room was probably an open court, to which the other rooms faced for light and air. The court also had a direct entrance from the side.

Domus

Residences more elaborate than those discussed up to this point look more like *domus* than apartment flats. The traditional Roman house was the atrium house, called by the

¹⁰⁴ Boethius (1960), pp. 163-165, discusses the strip house form in ancient and modern Rome.

Romans the *atrium* or the *domus*.¹⁰⁵ This form was derived from Etruscan precedents, as we know from early Etruscan funerary examples. Etruscan tombs often took the shape of houses, excavated into the rock, and from these Etruscan tomb-houses we can see the development of the classic atrium house form (Figure 3.28). It has been suggested that this form may have been imported from the east, since it is not convincingly related to any domestic Italian tradition.

The form that this house took was centered around a central room, the atrium (Figure 3.29). This room was open to the sky. It is thought by some that the name *atrium* is related to the Latin *ater*, black, and therefore has a connection with the location of the hearth, but this is speculative. Slanted roofs in a four-sided funnel configuration called a *compluvium* collected rainwater, funneling it into the open space above the atrium. In the center of the atrium was a pool (*impluvium*) that accepted the rainwater, and sometimes a cistern head. An entrance passage, the *fauces*, led from the front of the house to the atrium, which was flanked by small *cubicula*, bedrooms and storage rooms. At the back of the atrium was the *tablinum*, or office, and on either side of that were *triclinia*, dining rooms, used seasonally. Before these triclinia might be *alae* (“wings”), or sitting rooms. This was the traditional atrium house, exemplified in, for example, the House of the Surgeon at Pompeii.

This basic form became elaborated as upper-class Romans grew more wealthy and more interested in displaying that wealth in the later Republic and early empire. The display of wealth certainly came to be expressed in the atrium house, which grew to meet the owner’s assets, until Pompeian examples sometimes occupy entire city blocks. The basic atrium plan often persisted, but augmented by additional atria and a new element derived from Greek precedents, the peristyle court.¹⁰⁶ Such a colonnaded courtyard

¹⁰⁵ On the atrium house as known from Pompeii and Herculaneum, including its social structure and place in the urban fabric, see the excellent treatment by Wallace-Hadrill (1994).

¹⁰⁶ The Greek peristyle can be seen as a transformation of the garden space (*hortus*) that sometimes occupied the rearmost space of the atrium house, much like the rear courts of grouped *tabernae* on the Marble Plan.

would usually lie behind the atrium, and would often surround a garden (Figure 3.30). The peristyle's function was to provide luxury and relaxation, ends not served by the original atrium house design, which derived from an age when luxurious relaxation was not seen as a Roman value.

The atrium house type is best understood in the context of the Roman ritual of *salutatio*.¹⁰⁷ This was an expression and reaffirmation of the patron-client relationship that was a central aspect of Roman society. Rich patrons had a retinue of lower-class clients. The rich benefited by the votes of their clients, in elections, and by the prestige gained from appearing in public as a man of importance and influence in the company of as many clients as possible. Clients gained a wealthy protector, who was obliged to assist them in legal matters and affairs of influence. Free dinners and handouts of gifts and money could also be expected by the clients. These redistributions of wealth probably assisted Roman culture in the toleration of the extremes of rich and poor that typified the society.

An essential part of the patron-client relationship was the client's obligation to appear regularly in the morning to pay his respects to his patron. The line of clients outside the door of the patron was a visible sign of that patron's prestige and social standing; forming this display was part of their service to him. One by one they would be granted a brief audience with the patron, and in the course of this ritual the house structure came into play. The *fauces* entry corridor lined up directly on the axis of the house, and gave onto a view of the large central atrium. At the far end of this, often on an elevated floor, the patron stood in his formal dress toga.¹⁰⁸ The patron was prevented from directly

¹⁰⁷ On space and ritual in the Roman dwelling, see Clarke (1991) pp. 1-30.

¹⁰⁸ The structure of high-status houses at Pompeii, Ostia, and Herculaneum "almost invariably" includes a "deep view" from the front entrance, which displayed the magnitude of the house and could be used to visually frame the patron in a grand setting. On the occurrence of this deep view structure as a pattern in Roman houses, see Watts (1987), pp. 142-145 and fig. 87. Wallace-Hadrill (1994), pp. 44-5, comments on this feature as well, and Drerup (1959), esp. pp.158-9, explains the social basis of the domestic deep view phenomenon.

approaching by the impluvium, and had to go around to reach the man.¹⁰⁹ The cubacula surrounding the atrium were closed with huge doors, which hid the fact that the rooms were typically very small. The atrium projected an air of grandness and magnified the stature of the patron. Thus the architecture served the social purposes. As decor became more sophisticated, it too played subtle parts in the complex negotiations of status that took place in the “semi-public” meeting areas of the house.¹¹⁰ The design of the traditional Roman atrium house was thoroughly entwined in Roman social mores.

A wide range of atrium house types is well known from Pompeii. These were always the dwellings of the economic upper class. At Rome, increasing crowding meant that there was less and less room for traditional *domus* houses, especially the sprawling kind seen at Pompeii. One particular *domus* did sprawl and expand, and that was the Imperial palace, which grew on the Palatine to occupy eventually the entire hill, taking over the sites of many atrium houses once owned by famous figures of Roman history such as Cicero.

A number of examples of the traditional *domus* or atrium house appear on the Plan (Figure 3.31).¹¹¹ Fr. 331 depicts a *domus* reached by an off-center *fauces*, next to which are street-front *tabernae*. The *domus* has a central space around which are ranged four smaller rooms; the center was probably the atrium. Lying behind this is an open court with a roofed peristyle. The peristyle is indicated here only by the roofline, omitting the column symbols. Fr. 484 may present an even more regular and traditional plan, if a doorway connecting what appear to be the atrium and peristyle is omitted in the engraving.

¹⁰⁹ This prevention of direct approach is a psychological assertion of higher status still seen in executive offices where a table prevents direct approach.

¹¹⁰ Gazda, ed. (1991) collects essays on the role of art in Roman domestic settings, which is also a focus of Clarke (1991).

¹¹¹ Zığans (1941) identifies many atrium houses on the Plan, including in this category several examples that I have discussed under the categories of “*tabernae* around central courts” and “irregular dwellings.” This is a matter of subjective interpretation rather than material disagreement. The identification of the plans as dwelling units and the discussion of their occurrence and characteristics is more important than the associated semantics, especially since the Romans themselves so often blurred terminology divisions in such cases.

A *fauces* leads between *tabernae* to an open space off which four *cubicula* are arranged. The close resemblance of this plan to a traditional atrium-peristyle house prompts the supposition of engraver's error. If so, the atrium leads into a peristyle, indicated with column dots, with an arcaded walkway at the rear. Three peristyle *domus* of very traditional plan appear in fr. 11e. The one on the far right resembles the house in fr. 484, with four *cubicula* around the atrium, a peristyle with illustrated columns, and rooms opening onto this courtyard. The neighboring *domus* present almost identical plans with variations in the *cubicula* around the atrium.

Domus which vary from the strict traditional plan can also be identified. For example, a large house can be recognized lying behind a row of *tabernae* and reached by an L-shaped *fauces* appears in fr. 11b. The court of this residence is shown with a colonnade. The triangular space adjoining this was almost certainly a garden space. This is an irregular plan, but includes the important elements of a Roman *domus*.

Commercial Buildings

Commercial *Tabernae*

Commercial *tabernae* sometimes had architectural improvements which made them more inviting for potential customers, and several of these 'optional features' are depicted on the Marble Plan. Their presence is an important indication of the commercial (rather than residential) character of the *tabernae* with which they are associated.

Sidewalks

In some respects, the capital of the Roman Empire was worse off than many smaller cities under the rule of the emperor. The ruins of Pompeii and Ostia, for example, demonstrate that these cities were almost completely paved. Surprisingly, in Rome itself,

though the paved roads were a source of pride, many streets remained unpaved.¹¹² Even the city's own citizens sometimes marveled at the extraordinary contrast between the refined opulence of the typical *domus* and the squalor and dirt of the average street.¹¹³ Roman writers and elite administrators alike had to wade into mire when the streets were wet, and Juvenal complains of his legs being caked with mud from a brief walk.¹¹⁴ These remarks at the same time attest the dearth of sidewalks in Rome.¹¹⁵ Even in paved Pompeii, sidewalks were an amenity provided in many places to keep pedestrians above the muck and filth that collected on the streets. In Rome, sidewalks were doubtless an especially welcome amenity for the pedestrian, and *tabernae* facing them had relatively desirable locations.

The depictions of sidewalks on the Marble Plan require contextual reading (Fig. 3.32). The single edge line defining them can look like a mass line (a wall) or a roof line. Some rows of (presumably residential) *tabernae* did face blind corridors, making the interpretation difficult at times. However, roof lines are usually indicated by the column or pilaster symbols attached to them. Corridor walls can be ruled out when the row of *tabernae* faces a significant thoroughfare. Sometimes the presence of dashes symbolizing an arcade assists in confirming the reading of a sidewalk. An awareness of the value of sidewalks and their appearance on the Plan can keep misinterpretation of sidewalk lines to a minimum.

¹¹² Dionysius of Halicarnassus (3.67.5) counts Rome's paved roads as among the three greatest works of the city. But Rome was large, and the Regionary Catalogues count only 29 formal *viae*, "proper streets." Carcopino (1968), pp. 46-47, points out that "the paving of the *Via Appia* in 312 B.C. preceded by sixty-five years the paving on the *Clivus Publicius* inside the old republican city," and warns against the invalid and "treacherous" analogy of Pompeii in the matter of street paving and provision of sidewalks. Robinson (1992), p. 61 n.14, observes that "many, perhaps most, streets were not wide enough to have pavements."
¹¹³ Seneca, *Ira*. 3.35.5.

¹¹⁴ For laments about the unpaved streets of Rome, see Martial 7.61, and Juvenal 3.247.

¹¹⁵ Robinson (1992), p. 61, notes the rarity of traces of sidewalks.

The Mediterranean sun can be quite beautiful, but also oppressively hot in Italy's summer.¹¹⁶ Roofed shade (and protection from inclement weather) for strollers was an inviting amenity provided in every public portico, and many *tabernae* offered this attraction as well. The awnings that must have graced many of the street-front *tabernae* are invisible on the Marble Plan, though they should not be forgotten in reconstructions of the street environment. More substantial forms of roofing, on the other hand, do show up on the Plan, and can be read clearly.

Colonnades

One form of portico was the colonnade, a roof supported by columns. The earliest shops in the Roman Forum fronted on sheltering porticoes, and this remained a common tradition to the end of the empire.¹¹⁷ Such colonnades appear in two ways on the Marble Plan, both forms being graphic synonyms for the same kind of structure. The complete form depicts the roofline of the colonnade together with dots indicating the individual columns (Fig. 3.33 A). A simplified form of colonnade depiction exhibits only the dots, omitting the roofline, which is easily inferred from the indication of the columns (Fig. 3.33 B). Colonnades would typically support a roof or balcony, but did not have the strength to bear the weight of upper floors.¹¹⁸

Arcades

More common than colonnades in Rome were arcades fronting rows of *tabernae*. These were substantial constructions that would normally support any number of upper floors, and might themselves rise above the second-floor loft level over many shop rows.

¹¹⁶ The citizens of Rome complained when new regulations required wider city streets, because they did not like the way broad avenues let in the sun (Tacitus *Ann.* 15.43).

¹¹⁷ Livy 1.35.10, and Dionysius Halicarnassus 3.67.4 refer to the original *tabernae* of the Roman Forum, which in their earliest form resembled exactly those of the Severan Marble Plan, with rows of identical units facing a portico.

¹¹⁸ Packer (1971), p. 31, comments on the structural limitations of colonnades at Herculaneum and Ostia.

Arcades allowed residences to be piled vertically over limited pedestrian circulation area. Street-front arcades are well known from preserved Ostian buildings, in which they only occur in front of shops, which makes them a strong indicator of commercial rather than residential character.¹¹⁹ Arcades have a special symbol on the Marble Plan. Dashes (with or without serifs) always indicate arcades, and they are common on the Plan (Fig. 3.34). Arcaded shops were a staple feature of the Roman urban street scene.

Workshops

Street-front *tabernae* served as points of sale, and also as manufacturing areas, but many commercial operations required additional space for production or services. Back rooms have already been presented as one form of additional production space. Shops which required more space than a simple back room become 'workshops,' though as has been stated, such terminology categories are for convenience rather than reflective of any real division. Workshops can be difficult to distinguish on the Plan, but where large rooms appear behind *tabernae* (especially when they take up part of a court) or when large basins or other features appear in a courtyard, a workshop is indicated (Fig. 3.35).¹²⁰

It is difficult enough to identify the activities that occurred in many archaeologically investigated workshops; on the Plan, without any archaeological evidence it is impossible to propose confident identifications for such places.¹²¹ However, reasonable suggestions can be made for instances where some interior features are indicated on the Plan. The presence of what appear to be basins in some examples suggests that they may be *fullonicae*, fullers' shops--wool workers and especially launderers (Fig. 3.35).¹²² As

¹¹⁹ Calza (1914), p. 12, and (1923), p. 583, noted this correlation, which was supported by Packer's later work at Ostia (Packer [1971], p. 32).

¹²⁰ See Packer (1971), p. 13-14 for discussion of the identification of workshops. The presence of archaeological information such as mills, basins, and ovens assists greatly in identification at Ostia, and shows that large enclosed areas accompanied by smaller rooms at one end or side were typically work areas.

¹²¹ Meiggs (1973) suggests several of the commercial enterprises that required manufacturing or working areas--manufacturers of buildings materials, housewares, tools, clothing, luxury goods, and pottery.

¹²² Fullers, their workshops, and their part in Pompeii's economic structure are discussed by Jongman (1988), pp. 165-172.

known from examples such as the *fullonica* of Stephanus at Pompeii, a fullery was normally equipped with small basins for treading dirty clothes in a cleaning fluid, and larger basins of water for rinsing.¹²³ The two sizes of basin in fr. 11ef accord with this customary arrangement. Another provisional identification that may be suggested is for fr. 190, which includes interior details of cryptic form (Fig. 3.35). These may be taken to resemble grape or olive press (*torcular*) of traditional Roman form, as known from Boscoreale where the wooden elements, including the long lever (*prelum*) connected to the crushing basin, can be recovered or reconstructed.¹²⁴ These are only possibilities, but workshops of both types would certainly have existed in Severan Rome, and if the shops on these fragments are not examples of a *fullonica* and presses, they certainly resemble the ways in which those types of workshops might have been illustrated.

Horrea

Horrea were warehouses and storehouses, ranging in size from small private buildings to the huge state-owned warehouse complexes which stored the vital food shipments that kept Rome's huge population alive.¹²⁵ Warehouses are little known from remains in Rome itself, in spite of the fact that the city once boasted hundreds of them, including the largest known from the Roman world.¹²⁶ The Regionary Catalogues list a total of 290 warehouses in the city, and large sectors of the Tiber shore under the Aventine Hill and across the river in the Trans-Tiber area were densely packed with warehouses to receive the river-borne cargoes. Unfortunately, warehouses did not rate highly as a subject of interest to early investigators, and little or no record was kept of many that were exposed

¹²³ Adam (1994), p. 324-326 discusses and illustrates *fullonicae*, at which "in a custom now rare," the cleaning fluid was often urine, collected from passersby in amphorae provided at the streetside.

¹²⁴ See Adam (1994), pp. 317-318 on the representative presses from Boscoreale and Pompeii.

¹²⁵ A *horreum* was an individual storeroom in a warehouse, and the plural *horrea* is used to describe a warehouse or multiple warehouses.

¹²⁶ Rickman (1971), p. 87.

and either demolished or built over around the turn of the nineteenth century.¹²⁷ Few warehouses in Rome are known to any significant degree through excavation. The best published of these is the *Horrea Agrippiana* (adjoining the Roman Forum behind the Temple of Castor).¹²⁸ Others include the *Horrea Piperataria* (a specialized building for the storage and sale of exotic peppers, spices, and drugs), partly covered by the later Basilica of Maxentius, and several structures of unknown name, such as those excavated beneath the church of San Clemente and within the *Castra Praetoria*, the camp of the Praetorian Guard.¹²⁹ An understanding of the key role played by warehouses in the practical functioning of the vast supply system for the city of Rome is therefore at the mercy of very little excavated data from Rome itself, and Ostia is (as often) called in to clarify the picture of what the capital must have been like.

The one source that offers a great deal of information on the structure of Rome's warehouses is, of course, the Marble Plan. It is a fortunate coincidence that substantial contiguous portions of the Plan are preserved which show the warehouse districts near the Aventine and in the Trans-Tiber area, where recorded archaeological evidence is limited. The Plan fragments have been of primary importance in the reconstruction and understanding of Rome's warehouses.¹³⁰ The Ostian evidence furnishes valuable assistance in the interpretation of the Marble Plan records, and Roman law provides some understanding of the personnel and administrative organization associated with warehouses.¹³¹

¹²⁷ See Platner and Ashby (1929), at the entry *Horrea Galbae*. Rickman (1971), pp. 87 and 89, laments the lack of publication of the many warehouse remains exposed in 1880 and 1910 when large parts of the Testaccio district were developed for new housing.

¹²⁸ On the *Horrea Agrippiana*, see Astolfi et al. (1978), Berucci (1954), Shipley (1933), and Bartoli (1921), as well as discussion in Rickman (1971), pp. 89-97.

¹²⁹ The *Horrea Piperataria* was built by Domitian. It is referred to by Dio as a storehouse of Egyptian and Arabian goods (72.24.1-2=*Epit.* 73). On the meager records of this and the unidentified warehouses see Rickman (1971), pp. 104-108.

¹³⁰ Rickman (1971), p. 89.

¹³¹ "Every detail of the Ostian evidence is important because the buildings at Ostia are the 'living' embodiment of what is known for Rome itself only from the Marble Plan..." (Rickman [1971], p. 79). On Ostian warehouses: Hermansen (1981), pp. 128-135; Rickman (1971), pp. 15-86. On Roman law regarding warehouses and liabilities associated with them: Rickman (1971), pp. 163-193.

The most famous of Rome's warehouses are the large state-owned complexes used primarily to store the vast quantities of food that were imported into Rome, particularly grain, to feed its gigantic population. Over time, through confiscation and bequest, many large warehouses that had once been in private hands came under Imperial control, as did the lands that produced the tithe grain, and the Imperial bureaucracy increased along with this physical control. These large warehouses would have their own slave organizations, and were located near the river for practicality.

Warehouses are often made up of room units roughly the same size as *tabernae*, making certain structures ambiguous in their function. One may be unsure whether a Plan illustration represents a warehouse, or yet another configuration of *tabernae*. In the analysis of Ostian structures, warehouses can often be securely identified by architectural details, particularly pivot doors (as opposed to sliding shutters), which show that the room units were not retail *tabernae*, and raised floors, which were developed specifically for the bulk storage of grain.¹³² Such information cannot, of course, be gleaned from the Marble Plan. However, the 'ideal' types of warehouse are clear enough, and with these as a starting point, the nature and characteristics of warehouses may be explored.¹³³

Courtyard warehouse

Warehouses at Rome may be divided into three principal types, of which the courtyard, or quadrangle, is the most familiar.¹³⁴ This type is still in modern use. Many depot structures closely resembling Roman courtyard warehouses were, for example,

¹³² The raised floors allowed air circulation beneath the grain and regulated its temperature to prevent spoilage due to dampness and overheating (Rickman [1971], pp. 85-86, 293-297).

¹³³ Staccioli (1962) offers a brief introductory study of warehouses on the Plan; Rickman (1971), pp. 108-122, closely considers the warehouse evidence from the Plan in the course of his thorough treatment of Roman granaries and storehouses.

¹³⁴ Staccioli (1962) grouped the Ostian *horrea* into four types, but as Rickman (1971) observed, the two most important were the courtyard and the corridor form. These are the two divisions Rickman favors. I here add the magazine type (below) because it is distinctively different than either of the other types. It should be noted that Rickman also treats (pp. 73-76) *dolia defossa*. These are enclosed areas equipped with numbers of *dolia* (earthenware storage jars) sunk into the ground. The *dolia* could store liquid or solid goods. I do not treat the type here because *dolia defossa* cannot be distinguished from other enclosed spaces on the Marble Plan.

built in America during World War II.¹³⁵ The courtyard warehouse is a utilitarian solution to the storage, receiving, and disbursement of goods, providing controlled and enclosed open space for the assessment of goods being delivered or disbursed, and uniform storage chambers which make the assessment of inventory regular and straightforward. The typical Roman form was a rectangular or square courtyard surrounded on at least three sides by rows of rooms facing in towards the court. This type is well represented on the Marble Plan (Figure 3.36), an excellent example being the *Horrea Lolliana*, fr. 25.¹³⁶ A portico around the entire courtyard sheltered goods being transferred from inclement weather in most courtyard warehouses (portico columns are illustrated in fr. 3 and in several courtyards appearing in fr. 25). The storage rooms were usually of equal size, furnished with pivoting doors (often with locking mechanisms), and could have raised floors if the warehouse was designed for grain storage.¹³⁷ A second floor was not uncommon. If present, stairs near the entrance provided access, as seen in fr. 92. The upper floor, of course, lacked the convenience of the courtyard floor for crossing from one side to another. At least one bridge is known at Ostia, which was a partial solution to this problem.¹³⁸ The stairs to the upper floor typically began as stairs and then turn into ramps, for the benefit of the men carrying the goods. Warehouse entrances are often surprisingly narrow, as are the stairs, indicating that the burdens were normally carried by men, on their backs, and not on carts as one might presume. This conclusion accords with ancient art depictions of the transfer of wares and cargo. Human labor was cheap enough in the Roman world, and carts added unnecessary expense.

¹³⁵ Improved architectural technology has led to most modern American warehouses taking entirely roofed and enclosed forms for the protection of goods and the shelter of workers, but the courtyard warehouse can still be seen in many locations around the world at many scales.

¹³⁶ This example is especially important because it is the only *horrea* on the Plan with a preserved inscription identifying it securely as such.

¹³⁷ Rickman (1971) provides many examples of thresholds which indicate door types in his presentation of *horrea* in Ostia and Rome, with conclusions from the Ostian evidence discussed pp. 81-3.

¹³⁸ The so-called *Piccolo Mercato* (I.viii.1), discussed with illustrations by Rickman (1971), pp. 17-22.

Entrances were typically very restricted.¹³⁹ Warehouses would usually have a main entrance, and possibly a postern gate, which could have been used to emit bearers after they had discharged their loads, so that they would not interfere with incoming burden-bearers. The paucity of entrances is a typical feature of the *horrea*, arising from security concerns.¹⁴⁰ Warehouses are naturally a concentration of desirable goods, and in the case of food, oil, and wine, each of these goods was in a form readily usable to the average Roman. These would be subject to theft, and so entrances were kept to a minimum so that the whole complex could be secured with a minimum of difficulty. Warehouses are frequently furnished with a guardhouse near the entrances, and it is not unlikely that the doorman would have slept there.¹⁴¹ Rooms facing outward around the perimeter of a warehouse would have been shops or administrative offices.

Warehouses were often built in multiples in appropriate locations such as the river docks. In a few cases, a passage connecting two courtyards identifies the structure as a variant of the courtyard warehouse, the multiple courtyard form, of which the *Horrea Lolliana* is one. These formed especially large units, and in the Severan period can almost certainly be identified as state-owned facilities.

Corridor warehouses

The second principal type of Roman storage facility is the corridor warehouse. This type organizes the familiar rows of identical storage rooms along two sides of a narrow corridor rather than an oblong open court (Figure 3.37). Corridor warehouses sometimes lack porticoes, but the corridor spaces were narrow enough that these could easily have been roofed. In such cases they would have been given clerestories to admit light. The corridor warehouse is known both from Ostia and from the Marble Plan, where they are

¹³⁹ In his extensive study Rickman (1971), p. 79, concluded that "a striking feature of all plans of horrea in Ostia is the economy of entrances."

¹⁴⁰ The *Horrea Lolliana* is unusual in having several entrances.

¹⁴¹ The large room next to the entrance at the lower right of the illustration of the *Horrea Lolliana* is probably a guard's room, as are the rooms obstructing the entrances to the courtyards in fr. 33bc.

distinguished from corridor flats by the large number of rooms they include.¹⁴² The Plan also presents examples of “wide corridor warehouses,” which are alternatively “narrow courtyard warehouses,” depending on one’s point of view. While the two types do form distinct genres, there is clearly no hard and fast dividing line between them, and transitional forms are to be expected. There is insufficient evidence to determine the sequential primacy of either form, or whether one form developed from the other. Rickman concluded that the corridor warehouses at Ostia were a response to a decreasing amount of available space within the city over time. While this may be true at Ostia, there is no reason to suppose that the huge quadrangle warehouses in Rome would have eventually been replaced by corridor forms. The two types are merely alternatives, and perhaps the courtyard form was desirable for goods which required assessment or collection out in the open before being stored or redistributed.

Corridor warehouses were often smaller, privately owned structures put to many and varied uses. Roman laws give us insight into the way they were rented and used.¹⁴³ Private warehouses of every size had a hierarchy of owner, contractor-overseer, and renter, and the renter could rent anything from an entire warehouse to one wing, down to an individual room or even a single “safe-deposit” trunk in an *armamentarium*. The contractor-overseer, rather than the owner, was legally liable (to the limited extent that anyone was) for theft or damage. This division of responsibility allowed a wealthy person to own and profit from the warehouse without having any direct dealings with its operation or liabilities. This distancing from actual transactions fitted the Roman sensibility that petty commerce was undignified for the elite, and it is clear that the laws were designed to protect the dignity of the owner, preventing him from being drawn into tawdry lawsuits over individual complaints. The contractor would be a freedman or an

¹⁴² Naturally this allows confusion in the cases of “large corridor flats” and “small corridor warehouses.” More than four rooms in a row almost certainly indicates a warehouse. In the case of corridor structures with three or four units on a side, identification must be contextual and provisional.

¹⁴³ Rickman (1971), pp. 163-193, assembles and interprets the legal evidence.

equestrian who had less status to protect, and for whom commercial activity was seen as more appropriate. These legal aspects applied to the larger courtyard warehouses also, but they are best understood in the context of private ownership and small-scale clients.

Magazine Warehouses

A third kind of warehouse appearing on the Marble Plan, and known at Ostia as well, is characterized by banks of long, narrow storage rooms, which usually open outward to the street rather than in on a court (Figure 3.38).¹⁴⁴ This configuration of storage chambers is well known from Near Eastern and Aegean Bronze Age archaeology, and in those contexts the long storage rooms are traditionally called *magazines*, after the French term *magasin* (Fig. 3.39).¹⁴⁵ The terms seems appropriate to distinguish the genre of storage chambers at Rome from other warehouse types. Magazines could occur as components of courtyard or corridor warehouses, but those in Rome are not normally confined within a courtyard, forming instead solid buildings with doorways opening outward.¹⁴⁶ It appears likely that these were rented out to individual clients, who would each control access to their individual rooms.¹⁴⁷ The chambers are elongated to provide a large amount of storage space under the protection of a single locked door. Magazines on the Plan occur in rows of identical units (e.g. frs. 11b, 32a, and 421b), and sometimes form entire independent blocks, facing outward in four directions, as seen in examples on

¹⁴⁴ The *Horrea Antoniniani* at Ostia (II.ii.7) is not placed into a particular category by Rickman (1971), pp. 41-43, but I feel that the several examples at Rome and Ostia justify the identification of a type.

¹⁴⁵ Staccioli (1959) interpreted these as *tabernae*, but noted that they are often found in commercial zones near large warehouses, and that it was possible that they were in fact warehouses. I believe that the interpretation as magazines is most satisfactory, considering the characteristics of the rooms in these structures.

¹⁴⁶ The identification of warehouse storage chambers as magazines is as open to subjective interpretation as the distinction between courtyard and corridor warehouses. Several *horrea* at Ostia have individual rows of rooms markedly deeper than the other component storage chambers of the warehouse, prompting the identification of the particular row as magazines (e.g. in the *Piccolo Mercato*). Many others present chambers of intermediate form (e.g. the *Grandi Horrea*). The important distinction of the magazine *horrea* type at Rome rests on its outward-facing orientation and lack of any courtyard.

¹⁴⁷ Although it must be noted that the magazine *Horrea Antoniniani* at Ostia is equipped with raised floors for grain storage, which together with its size prompted Rickman (1971), p. 43, to identify it as a State-owned storehouse. The building is only partly excavated and may have had a central courtyard, which would distinguish it from the Roman examples on the Plan which do not.

fragments 40c and 40gf, where the design incorporates rooms of several distinct sizes, perhaps to serve individual clients with varying space needs. These structures have no courtyards, and should be restored as single-story buildings. *Tabernae* sometimes occur within these magazine blocks; the *tabernae* may have housed an overseer or office space, or independently rented shops.

Small Baths

The giant Imperial baths (*thermae*) of ancient Rome have received significant attention in recent scholarship, but the colossal monumental constructions built by the emperors were far from being the only bath complexes in town.¹⁴⁸ There were also smaller facilities, called *balnea*. The term *thermae* is normally used for the grand Imperial baths and other large complexes of axially symmetrical plan with large enclosures. *Balnea* is normally applied to more modest baths of “Republican” type, typically without axial plans and having only small courtyards rather than expansive palaestra.¹⁴⁹ The terms *thermae* and *balnea* were subjectively applied, and baths of intermediate sizes could be called by either Latin name, but the terms are useful distinctions nonetheless.¹⁵⁰ The Central Baths of Pompeii are a typical form of minor bath complex, illustrating the basic components of *apodyterium* (changing room), *tepidarium* (temperate room), *caldarium* (hot bath), *frigidarium* (cold bath), and *palaestra* (exercise court). These baths also have *tabernae* surrounding two sides of the *palaestra* (Fig. 3.40). The several bath rooms were

¹⁴⁸ DeLaine (1988) surveyed recent research on Roman baths and noted that small baths had received very little attention. This situation was substantially rectified by Nielsen’s excellent publication (1990) on *thermae* and *balnea*.

¹⁴⁹ Staccioli (1961), p. 93. The terms are far from perfectly distinct, and Nielsen (1990), p. 3, uses *balnea* to describe “a public bath without a sports area,” that is to say without a courtyard *palaestra*. In this study *balnea* is used more generally of minor baths.

¹⁵⁰ The *Thermae Surae*, for example, so-called in the Regionary Catalogues (Region XIII) and other ancient literature (Aurelius Victor *Caes.* 13.8; *Epit.* 13.6) are titled on the Marble Plan as the *BALneum SVRAE* (Fr. 21). The Baths of Agrippa, begun in 25 B.C. (Cassius Dio 53.27.1), were the first to be called *thermae* (Staccioli [1961] p. 93), apparently since the old republican term *balnea* seemed inadequate for this magnificent construction. “*Thermae*” was a term based on the Greek word for heat, and related to the practice of heating the *caldarium* or hot room of the bath. Agrippa’s complex began the series of great Imperial Baths, and henceforth the two terms *thermae* and *balnea* would take on their customary distinction between large and small complexes.

customarily visited in a sequence of gradating temperature, and the rooms are arranged in a connected row.

The Regionary Catalogues attest that *balnea* were scattered throughout the city.¹⁵¹ Only the extremely wealthy had bathing amenities in their homes; most citizens of Rome, wealthy or poor, went to some public complex for bathing. Only one of the fourteen administrative regions in the city is listed with fewer than 40 baths in the Regionaries, and eight regions are listed with at least 75; they were numerous and could be found in every quarter of Rome. It is clear that nearly all of these baths would have been small, privately run complexes. The number of these listed in the Regionaries indicates that the smaller complexes were patronized by many. These smaller baths were a significant part of the city's urban fabric, tucked into many places, and indeed as ubiquitous as the *hammam* bathing facilities are in many modern Arab countries, in cities large and small. These smaller complexes would typically serve a neighborhood clientele, and the bath would be a place of social interaction as well as hygienic services.¹⁵²

Approximately twenty minor baths can be discerned on the Plan (Figure 3.41 and 3.42).¹⁵³ The sequence of component bath rooms provides the most distinctive identifying mark of a small bath on the Marble Plan. This can occur without an associated *palaestra*, as is known from preserved examples such as the *Terme di Mitra* at Ostia (Fig. 3.40).¹⁵⁴ The bath rooms were equipped with basins for water, which the Plan occasionally illustrates. The *caldarium* would usually be at one end of the row, so that it could be heated from an adjoining furnace room (*prae-furnium*). An optional feature associated with the bath rooms proper is the *palaestra*, the open court for exercise. The

¹⁵¹ To be discussed in detail below, Chapter 4, "*Density of Balnea*."

¹⁵² The "executive steam bath" comes to mind as one modern analogue for a bathing facility whose social function is arguably more significant than its hygienic service.

¹⁵³ The point of departure for any analysis of minor baths on the Plan is Staccioli (1961), a useful study in a series of useful studies of building types on the Plan by this author. Staccioli identifies some of the minor baths on the Plan and provides brief commentary. Nielsen (1990) is equally important here for here examination of a great many small baths throughout the Roman world.

¹⁵⁴ See Nielsen (1990), vol. 2, p. 92, which also illustrates the *Terme della Basilica Cristiana*, which are the same most basic design of rooms in a sequential row.

series of bath rooms normally runs along one side of the open space that serves as the palaestra. The dressing room, *apodyterium*, normally lies between a main street entrance and the series of bath rooms. There can be entrances from outside directly to the palaestra; the sequence of bathing was not rigid. A doorman's chamber is another common feature. Apsed rooms are especially typical of baths, and apses are another important clue that one may be looking at a bath on the Plan. A second nucleus of a series of bath rooms may be present, possibly ranged along a second side of the palaestra, and while the old Roman bathing custom of separation of the sexes came and went in the Imperial age in the great baths, the private baths may often have offered services to a specific clientele, not limited to gender and including other categories of people such as class or occupation.¹⁵⁵ A number of small chambers are often associated with baths on the Plan, in a variety of layouts. Such rooms would have been areas where various services were provided, such as massage, grooming, or hair removal.

This examination of the non-monumental architecture depicted on the Marble Plan has focused only on identifiable classes of structures. The ancient city was filled with many non-monumental buildings difficult or impossible to classify on the Plan, such as schools and guild halls among others. Nonetheless, this analysis of the residential and commercial matrix depicted on the Plan has rendered it much more susceptible to urban analysis, and has shown that the Plan contains a great deal of information about the structure of Severan Rome that has gone, for the most part, unexploited.

¹⁵⁵ Nielsen (1990), p. 146.

CHAPTER IV

THE URBAN FORM OF ANCIENT ROME: THE MARBLE PLAN AND THE REGIONARY CATALOGUES

Introduction

Chapters 1 and 2 explored the appropriate ways to read the Marble Plan, and explained the caveats with which its information must be handled. Chapter 3 presented the non-monumental architectural vocabulary of the Plan, and at the same time of the city of Rome. This chapter turns from the study of the Plan itself to the study of Rome's urban form. In this chapter I will dwell in depth on a special additional source of information, the Regionary Catalogues, which complement the data provided by the Plan and assist greatly in the objective assessment of Rome's urban form. The study of urban form has taken many approaches, and I will begin by characterizing past approaches in Classical archaeology, discussing approaches in urban planning and anthropology, and some recent new directions in the study of urban form in Classical archaeology. I will then present a framework for urban analysis that will guide my assessment of Rome that follows in this chapter.

The study of urban form

The study of cities covers a very wide range of intellectual territory, as cities themselves involve a rich spectrum of human activities. Marcus has characterized

classification schemes for cities as primarily addressing either size, geographic location, function, position in a hierarchy, or form.¹ Cities can be investigated for the cultural systems that sustain them as well, and Rome has been the subject of such studies recently.² Urban form may reflect all these variables, and is therefore a particularly useful framework for studying cities.³

Aspects of urban form fall into two categories, form at a microstructural level and form at a macrostructural level. By microstructure, I mean the level of individual buildings and the relationships between them and their neighbors. Urban microstructure may be divided into the monumental and non-monumental categories described and employed in the previous chapter. As noted there, the monumental urban microstructure of classical cities is well studied, and indeed cities are often characterized by their monumental microstructure and little else. The elements of this category are frequently the most visually striking, and tend to concentrate both resources and cultural symbolism; so this category merits the attention that it has received. The macrostructural level is that of overall layout, city-wide systems, and districts or quarters of a city as they may differ in character.⁴ The literature of general urban studies is filled with analyses of the ways in which the different regions within a city can be characterized, classified, and related to the forces perceived to define them.⁵ Street plan is only one macrostructural aspect among many, which include regional and inter-regional concepts such as industrial zones,

¹ Marcus (1983), p. 196.

² Stambaugh (1988) and Robinson (1992) are wide-ranging explorations of cultural systems in Rome. Robinson specifically addresses city planning and administration. Both relate many aspects of urban form to these systems. Weber (1958) is a fundamental source on the study of cities in general, and his approaches to types of cities are primarily social/governmental and economic.

³ Marcus (1983), p. 196. Another approach is that of the urban planners who view urban form at a very abstract level, frequently critiquing cities as artistic expressions. They are usually interested in analysis for the derivation of prescriptive principles for modern urban design. This was the aim of Alexander et al.'s "pattern language" (1977), for example. Lynch (1960) is one of the most important post-war urban theorists, and the topological vocabulary for describing urban form that he provided has been widely adopted in urban planning. His approach identifies five elements which he believes constitute the image of a city: paths, edges, districts, nodes, and landmarks.

⁴ These categories overlap in the such features as city walls, which have both a microstructural and a macrostructural aspect.

⁵ Scargill (1979) provides a comprehensive introduction to urban macrostructural analysis, presenting important classification schemes and identifying the social and economic forces seen to underlie Late Pre-Industrial and Post-Industrial urban macrostructural form.

residential zones, nuclei, and periphery. Classical urban macrostructural analysis tends to focus on one particular aspect among all these.

Traditional focus on the regular grid plan

In Classical archaeology, the traditional study of ancient urban macrostructure has been closely focused on the study of regular city plans.⁶ 'Hippodamian' planning, as the regular grid came to be called, was an important legacy of the classical world to the modern world, taken up with special fervor in the Americas as new towns were founded by the dozens in the expansion period. The regular grid was seen as aesthetically superior to the cramped irregular plans common in European towns, and after William Penn's experiences with both the Great Plague and Great Fire of seventeenth-century London, he strongly promoted the regular grid as the superior city form on the basis of hygiene and public safety as well. Philadelphia, laid out by Penn in 1683, served as a primary model for later American grid cities.⁷ Many classical cities were indeed organized on the basis of regular grids, and the plans of ideal examples Miletus and Priene have become some of the most familiar icons of ancient urbanism.⁸ Regular plans are known from Egypt and were a subject of Greek attention from the fifth century B.C., and (partly through the Etruscans) the concept was passed to the Romans to manifest itself in many of their colonies as well.

⁶ Owens (1991) devotes *The City in the Greek and Roman World* almost entirely to the history of urban planning. The idea that town planning is of central importance for the study of the ancient city is a consistent tradition dating back to Haverfield (1913) and Von Gerkan (1924). Castagnoli (1971) and Ward-Perkins (1974) continued the tradition, and Owens does not deviate from this course (as noted by Laurence [1994], p. 12). Ward-Perkins admits that many more settlements grew organically than were planned, and that they tended to have a vitality "which may so easily elude the planner"; Owens recognizes that grid planning is not all there is to ancient cities (pp. 1-7), but remains convinced that regular planning is the thread to follow through urban history. This territory has been thoroughly covered and I will not attempt to summarize classical urban planning here.

⁷ Spanish settlements in the New World fell into three specific categories: the presidio (military base), the pueblo (for trade and farming), and Catholic missions. From 1573, according to these categories the Laws of the Indies rigidly controlled the forms of hundreds of settlements, with specifications for central plazas and planned growth on a grid plan. The grid arrived as policy in New England only in 1786, as part of the newly-United States' expansion plans; like the rhetoric, architecture, symbolism and government of the Founding Fathers, plans for new cities in the new country were steeped in classical models (and meant to be distinct from the European). As Morris (1979) put it, describing both the Spanish and American urban plans, "Vitruvius had come to the New World."

⁸ See, for example, Wycherly (1962), Figs. 3 and 6.

It is plain that the regular grid plan was a widespread and influential concept in classical urbanism, and therefore the subject warrants the extensive attention it has received.

However, this focus on urban form as manifest in regular grid plans has resulted in a generally narrow view of classical urban macrostructure. Limiting the study of urban macrostructure to the study of regular plans limits the analysis to a few brief moments in the city's history when new territory was surveyed and laid out as the result of decisions by a single planner or a small group. The tracking of the installation of monumental buildings into this plan over the course of the city's development adds an important additional dimension to such studies, but the overwhelming emphasis on the significance of the street pattern still distorts and limits a more well-rounded assessment of urban form.⁹ In connection with the subject of regular planning, Owens quotes Plato and Aristotle on the design of the ideal city, and their discussions indicate the academic nature of much of this material.¹⁰ In his views on the subject, Plato is a complete idealist whose ideas have little place in the real world.¹¹ Aristotle offers more reasoned and practical considerations.¹² It is interesting that for Aristotle, 'town planning' in the now-conventional sense of grid plans, was purely a superficial aesthetic question, not a matter at the heart of urban identity. The significant point is that geometrical town planning is indeed more the province of philosophers than of the mass of urban inhabitants who actually built and lived in ancient cities. A narrow focus on regular town planning leaves out many aspects of the city's form that are meaningful and indicative of a broader portion of the population.

The grid plan has less to do with the 'identity structure' of the city than many other aspects of urban form, and it is a mistake to over-emphasize a grid plan as most significant. For the Romans, a city was conceived of as a package of buildings and

⁹ Nash (1944) presents an alternative approach, considering a full inventory of monumental and non-monumental architecture in the Roman town, and presenting many photographs to describe the urban fabric of the Roman city, rather than abstracting this fabric into a plan diagram.

¹⁰ Owens (1991), p. 4-5.

¹¹ Plato, *Leges* 778 a-779d.

¹² Aristotle, *Pol.* 1330b-1331b.

amenities. Pausanias (in a commonly cited reference to the Greek town of Panopeus) says that he cannot really call the place a city because it lacks the public buildings that really define a city, such as government buildings, a theater, and a market square.¹³ Apuleius and Aelius Aristides support this Roman emphasis on urban amenities, and this perhaps justifies the emphasis given to the other aspect of classical urban form that receives most of the attention, monumental public buildings.¹⁴ But even for the Romans, the list of attributes that “made a city” never included a regular plan. We as modern scholars tend to dwell excessively on this aspect due in part, no doubt, to the way we are accustomed to dealing with the forms of ancient cities in books. When one presents a figure of Priene, it is a drawing of its street layout. When one presents Timgad, the figure is a plan or aerial photo in which little is discernible but the contrast between areas of regular and chaotic layout (Fig. 4.1). These figures, though certainly interesting, may have contributed to the apparently common presumption that regular plans constitute the most significant aspect of urban form, and define the physical identity of cities. Timgad's urban form might be better served by a collection of figures showing the aspect of its streets, a typical house, and some of its public buildings.¹⁵

It is interesting to observe the fact that grid plans were not necessarily regarded as the *ne plus ultra* of urban design in antiquity.¹⁶ Regular plans are often associated with necessary efficiency, and are abandoned when expediency does not require them. Egypt's Kahun (Fig. 4.3), a city constructed to house the builders of Sesostris II's pyramid, is highly regular and extremely well-ordered, as is the tomb-workers' village at Deir el Medineh, near the Valley of the Kings.¹⁷ Tell el-Amarna, however (Fig. 4.4), a residential city, has no regular layout in spite of the fact that it too was a new

¹³ Pausanias 10.4.1

¹⁴ Apuleius, *Metamorphoses* 2.19; Aelius Aristides 14.93-94.

¹⁵ This is exactly the approach taken by Nash's brief excursus on Roman towns (1944), but it is not common, nor explored in depth.

¹⁶ Aristotle felt that irregular plans were harder for an enemy to invade (*Pol.* 1330b-1331b).

¹⁷ Stevenson Smith and Simpson (1981), pp. 170-173, 320.

foundation.¹⁸ Roman colonies with a military origin typically took the nucleus of their layout from the famously regular design of standardized rectangular Roman military camps; the resulting grid plan is apparent at Timgad and Ostia, for example (Fig. 4.1 and 4.2). In both these examples, when the settlement spread beyond the original defensive limits (under safer circumstances) this new development took irregular form. If the grid plan had been important to Roman urbanites, it could have been extended in further development of military colonies, and this extension could have been planned for in the original layout of the cities. The evidence suggests that this was not a concern, and even that, given a choice, citizens may have preferred an irregular city plan. There were certain real advantages that could be imputed to irregular plans. Citizens of Rome protested Nero's regularizing of the streets after the Great Fire of A.D. 64, since the new streets were wider and, unlike the old irregular warrens, more susceptible to oppressively hot sunlight.¹⁹

The extreme emphasis on the grid plan in modern scholarship on classical urban form has fostered the wide acceptance of a standard but very limiting dichotomy which divides all cities into two categories, planned or unplanned. In practice this has resulted in an effective categorization of cities as 'planned' or 'other' that is approximately as appropriate and helpful as a classification of all religions into 'Christian' or 'other.' The premise is typically that cities *should* be planned, and that if they are not, their forms are not really worth studying, or indeed cannot be studied. Consequently works on classical urban form normally deal exclusively with cities of regular plan. The value system attached to city layouts has stymied investigation of the full diversity of urban forms, and has resulted in some frustration when the limited focus fails to include particularly important cities such as Rome, Athens, or Pergamon, which demand recognition. The following is a typical expression of this value system: "Athens and Rome were in many respects unworthy of their reputations as leading cities of Greece and Italy, and as capitals of their respective

¹⁸ *ibid.*, Fig. 308. Amarna post-dated the regular plans mentioned.

¹⁹ Tacitus *Ann.* 15.43

empires. Both cities were characterized by cramped, overcrowded conditions. The streets were narrow, insinuating themselves between irregular blocks of houses and public buildings....”²⁰ Rome in particular has traditionally resisted systematic assessment of its general urban form because its layout was famously irregular. While social historians have not shied from characterizing the urban fabric of ancient Rome on the basis of literary and archaeological evidence, it remains true that in literature devoted to urban form Rome is frequently described as “unworthy” because chaotic, and therefore disappointing. One even finds some scholars attempting to rationalize an ‘improved version’ of ancient Rome’s urban fabric, a version more regular, and more acceptable, than the image produced by the evidence.²¹ While it may be diverting to imagine (as the city’s apologists sometimes seem to be doing) what form a well-ordered city with the resources of Rome might have taken, it is more helpful to confront the testimony of the evidence, and to search for meaningful aspects, patterns, and structure within the irregularity.

New directions in the analysis of ancient urban form

Recently, a few authors have undertaken urban macrostructural analysis of classical cities without excessive or exclusive focus on the grid plan. Two in particular offer innovative approaches. MacDonald identifies an important, formulaic but irregular identity feature of Roman cities in the arrangement and linkage of the principal public buildings and spaces which he calls an “armature.”²² The associated elements are the old standard Roman inventory, but MacDonald identifies the vital connecting feature as main streets that form a backbone leading through the city and linking the elements of that inventory. This, in MacDonald’s view, is one of the crucial identity elements of a Roman city, and his documentation of the armature in numerous Roman cities of many different forms

²⁰ Owens (1991), p. 11.

²¹ As an example, in spite of the literary and Marble Plan evidence to the contrary, Boethius (1934) preferred to believe that, after the fire of A.D. 64, Nero really had fashioned old irregular Rome into a New Rome something like central Ostia.

²² MacDonald (1982).

supports his argument. It is significant that his assessment is based not on a poring over of earlier studies and their figures, but from the experience of having visited many Roman cities in person. In another approach, Laurence has examined Pompeii's urban form with statistical and analytical methods to extract objective data that can be used to support generalizations about the form of the city and the ways in which it reflected the cultural values and priorities of its inhabitants.²³ These have been salutary new approaches to the urban analysis of classical cities, and they suggest that the study of classical urban form, beyond the traditional limits of the grid plan and the inventory of monumental buildings, offers many promising possibilities to be further explored.²⁴

A framework for ancient urban analysis

Marcus has summarized several of the basic schemes for classifying cities on the basis of macrostructural form.²⁵ Three principal models apply to both regular and irregular cities. The simplest is the concentric model (Fig. 4.5), which describes a form of city oriented around a single nucleus, a center which contains the largest or most significant buildings or the densest residential occupation (often all these are present in a city center). Density of settlement and public buildings declines with distance from the center. More complex models taking concentric form reflect modern sensibilities such as a disdain for residence in the city center by higher-class citizens, who form a commuter band of suburbs around the city periphery, while lower-class residents live in rings closer to the center (Fig. 4.6).²⁶ A modification of the concentric model is the sectorial model, which reflects the tendency for settlements to establish points or small areas with a particular identity (such as high-class residential areas), which extend radially with growth,

²³ Laurence (1994).

²⁴ Stambaugh (1988) undertakes an impressively comprehensive study of the city of Rome as both a physical and a social environment, relating his cultural and historical analysis to urban microstructure and macrostructure in many ways.

²⁵ Marcus (1983), pp. 196-206. See also Scargill (1979).

²⁶ Burgess (1925) described a more complex version of the basic concentric model that reflected modern economic class segregation and values regarding the most prestigious zones of the city for elite citizens to live in.

producing sectors of consistent identity within the concentric context (Fig. 4.7).²⁷ An alternative to concentric-based models is one that recognizes multiple nuclei, in which a city is organized around more than one node (Fig. 4.8). These multiple nuclei may reflect separate political, religious, or commercial foci, for example, such as a manufacturing zone around which factory workers live, and a political and commercial center around which other citizens live.²⁸ In respect to each of these classificatory schemes, a regular street layout is irrelevant, and thus they demonstrate alternative approaches to the analysis of urban form. Each of these models describes the possibility of comprehensible order without geometric regularity, and also suggests that physical dimensions of a city can be investigated for cultural explanations.

A problem with such classificatory schemes is that city forms occur in such diversity that efforts to make a variety of real examples fit any particular scheme often results in the rejection of exceptions, and “the result is that the exceptions, as well as the variance they represent, go unexplained.”²⁹ This is precisely the case, for example, with irregular cities and the regular plan models. Proposed here as an alternative to a classificatory scheme is a set of factors to consider in urban analysis. It is a framework for observation that can help to cut through some of the overwhelming individuality seen in the various manifestations of urban form, to reveal some of the underlying principles expressed by the city-building culture. This framework does not force any particular example into a category it does not really fit, but offers a profile of observed characteristics which will suggest aspects of culture that these characteristics may be tied to. In a more developed state, this framework may eventually serve with a body of associated cultural information to make cities from widely different cultures and periods objectively comparable. The intent of this framework is to provide a useful way to approach urban form that supports thoughtful investigation of the role of culture in determining urban form. I will present a series of

²⁷ Hoyt (1939) developed the sectorial model.

²⁸ The multiple nuclei model was developed by Harris and Ullman (1945).

²⁹ Marcus (1983), p. 198.

factors to be considered about a city, and illustrate how each one is indicative of some aspect of culture. Most of these factors can be investigated at both the microstructural level and the macrostructural level. The Plan will continue to assist microstructural understanding of Imperial Rome, but for the macrostructural level other sources must be explored.

Layout

A city's layout or plan can carry implications about the way in which the city's identity was conceived by those responsible for the street plan. A regular layout indicates a concept of the city as an abstract entity in the minds of its original planners; the city existed in a future form in their minds, and they then conceived a plan to accommodate its envisioned elements and magnitude before any of these elements were actually created. This mental image of a future city, rendered into the ground in the form of a street plan (usually with accommodations for certain public buildings and spaces), controlled the eventual materialization of the city. Regular plans therefore indicate a pre-existing image of a city, and show that its identity existed before its form did. Regular plans also indicate an authority structure, under which a group of future citizens participated in a unifying scheme. Whether the plan was approved by a vote or imposed by an authority figure or group, its acceptance demonstrates a sense of shared identity in a city before any of it was constructed. Regular plans may also demonstrate a city foundation under conditions which required efficiency, especially military preparedness (in the case of Roman colonial foundations) or the rapid and regular distribution of land plots to new settlers.

Irregular plans can arise without any such preconception, forethought, or sense of shared identity, and often indicate the lack of one or more of these factors in the formation of the city layout, although not necessarily. Irregular plans, often structured around pre-existing footpaths and gradually filled in with construction and more footpaths, can indicate a less conscious sense of the city as an abstract identity, an unwillingness to

surrender individual initiative to an authority structure, or simply a lack of preference for a regular plan (as seems to have been the case in the development of many Roman cities). Irregular plans typically indicate a lack of concern for efficiency, and suggest circumstances surrounding the formation of the layout under which efficiency was no priority. However, in certain topographic situations, an irregular plan may in fact be the most efficient layout of paths and streets, and this possibility should not be discounted before it is examined.

The combination of regular and irregular elements of a city's plan suggests development at different periods under different conditions, and in the search to explain a combination plan, important aspects of a city's history may be discovered.³⁰ Ostia, for example, has an orthogonally gridded original settlement since it originated as a military camp (a *castrum*) detached from Rome in order to secure the increasingly important mouth of the river Tiber, and the roads that met in the area.³¹ The *castrum* grew into the town of Ostia, with an irregular civilian settlement developing on its west side as Rome's increasing power made the area secure (Fig. 4.2). The result of this history is the combination of a regular grid within the old *castrum*, and the growth of new streets around the old paths outside the camp. Roman camps had ordered grid forms for combat efficiency, and it is interesting to observe that this foundation grid was rarely respected by the layout of further development when civilian towns grew from them. This raises the question of whether the grid plan was even considered as desirable by the citizens of ancient Roman cities. The combination of regular and irregular plan of Timgad (Fig. 4.1), already mentioned, is the result of an urban growth history similar to Ostia's.

Rome also displays a degree of combination layout, which is again expressive of its history of growth and of changing circumstances over time. Most of the city is quite

³⁰ Perring (1991) explores the relationship between spatial organization (especially street plan) and social change in Roman towns.

³¹ Salt collected from this area was one resource of interest as well. On the urban growth of Ostia see the summary in Hermansen (1981), pp. 1-13.

irregular, but two particular areas of regular alignment stand out, the Campus Martius and the series of Imperial fora (Fig. 4.9). Rome began as the synoecism of several pastoral villages, the eventual city's layout arising on the basis of the paths that had connected the villages to each other and to territories beyond.³² This gradual formation and increase of the city's size rendered the old irregular paths into the city's street plan. One of the only "urban planning" acts carried out in the name of the city as an abstract concept was the filling in of the swampy Forum district, which became as a result of this substantial environmental modification the principal meeting place between the several now-unified villages.³³ This provision of a common open space was possible because the frequently-flooded district had sustained little previous permanent construction. A later major architectural effort of the community in the Regal period was the construction of the great temple of Jupiter Optimus Maximus atop the Capitoline Hill. Even this required the moving of many small shrines which had been constructed in the area.³⁴ From a very early point, indeed as soon as it obtained its identity as "Rome" rather than as several independent villages, Rome was saddled with a history of casual irregular paths that determined its future layout.

The sack of Rome by the Gauls in 387/6 B.C. was traditionally believed to have devastated so much of the city that the Romans considered moving *en masse* to nearby Veii. Their decision to rebuild in haste was lamented by later historians as the loss of opportunity to regularize the street plan.³⁵ Another great disaster, the catastrophic fire of A.D. 64, provided some opportunity for a "clean slate," and Nero tried to enforce some

³² The original site therefore already precluded the possibility of a layout *ab initio* (cf. Strabo 5.3.7).

³³ Ammerman (1990) documents the early filling of the Forum.

³⁴ The original temple's foundation and the moving of the crowd of other shrines are described in Cicero *Rep.* 2.36; Livy 1.38.7, 55.1-56.1; Pliny *NH* 3.70; Dionysius Halicarnassus 3.69 and 4.59-61; Tacitus *Hist.* 3.72; Plutarch *Poplic.* 13-14).

³⁵ Livy 5.55, although as Robinson (1992), p. 16, points out, the grid plan "was at that time not known to the Romans." Ogilvie (1965), p. 751, observed that the city was probably not so thoroughly destroyed that a completely new layout would have been possible anyway (cf. Livy 5.50 and 53). Most importantly, note Cornell (1995), pp. 317-318, who establishes that the Gauls robbed but hardly laid complete waste to the city. The tradition about the hasty rebuilding from utter ruins may have been a later fiction to explain the irregular and perhaps embarrassing street plan of Rome (suggested by David S. Potter).

measures improving the city structure in the reconstruction. But these measures were for the most part modifications within the old layout, rather than replacements of it, and the irregular plan remained.³⁶ The annual magistracies in Republican Rome precluded any long-term vision of urban development from being enacted, and longer-term civil servants “were too subordinate, too inferior to their political masters, the magistrates, to be in a position to formulate or sustain policies.”³⁷ Only two significant exceptions to irregular plan appear in Rome. The first is the Campus Martius, an expanse of public land which remained largely unoccupied until the Late Republic. At this time, large public buildings began to be erected there, and over a century and a half many of these were added in orthogonal alignment. It was the only opportunity that ever existed for a large sector of unoccupied territory to be given an ordered plan in Rome. The second significant case of regular plan within the city is the sequence of Imperial fora, together with the *Templum Pacis*, which were all carefully aligned with each other. This late expression of order was carved out and shoehorned into the heaviest development in Rome, and each forum is therefore an expression of the tremendous financial resources controlled by the builders, who had to buy up the necessary territory for their fora.³⁸ It is not surprising in this light that the only regular layout in the heart of Rome was built by Julius Caesar and a succession of emperors.³⁹ The combination of order and disorder in Rome's plan relate directly to its history of gradual growth on an irregular foundation, and the presence of the order of the Imperial fora in the heart of this organic web of streets makes a powerful statement about changing circumstances in Rome, under which such incredible sums of money were concentrated in the hands of individuals who were the only ones sufficiently

³⁶ Tacitus, *Ann.* 15.43 attests the reconstruction and reorganization efforts of Nero after the fire, though later literature and the Marble Plan confirm that the reorganization was not as drastic as it may seem from Tacitus' remark.

³⁷ Robinson (1992), p. 16.

³⁸ The Forum of Augustus has an asymmetrical plan due to the fact that he was unable to obtain all the property he wanted for his design (Suetonius *Aug.* 56.2).

³⁹ Caesar in fact had great, even utopian dreams for the reorganization of the city that were cut short by his assassination (Suetonius *Julius* 44). Cicero was aghast at such thoughts of wholesale restructuring of the city (*ad Atticus* 13.20; 13.33; cf. 13.35).

empowered, and for extended (lifelong) terms, to alter greatly the traditional irregular plan of the city. Without the change to autocratic rule, it is unlikely that any such impositions on the old irregularity would ever have come to pass.

Inventory of architectural types

The inventory of building types in a city is a meaningful index of many aspects of its culture, and a complete review of any city's architectural vocabulary is instructive about the complexity of its society and about the elements of culture that were important to both individuals and the community. A first question to consider is the nature of public buildings. The exploration of urban identity through public buildings is one of the standard approaches in classical archaeology, and the social role of such buildings as basilicas, public bath complexes, porticoes, theaters, and fora are well discussed in existing literature. This is a primary component of urban form analysis, but in consideration of its well-established place in the field only a few aspects warrant brief mention here.

The presence of large public buildings is, to begin with, not necessarily a given factor, even in a significant settlement, and the particular profile of those that do exist is always a significant expression of cultural organization and values. Public buildings typically express the power and common identity vested in some form of organization, whether this is religious or political. Etruscan cities are known for their striking lack of public buildings other than temples. This feature of the urban architectural vocabulary may suggest that the Etruscans did not have a strong political structure, and that the administration of the cities was carried out through the influence of powerful families rather than through political organizations. The kinds and magnitudes of political buildings naturally testify to the active political milieu of the time when they were built. The huge Pnyx of Athens supported a democracy in which assemblies involved the entire citizen population. The Senate building in Rome represented a strong element of

oligarchical government. The Imperial Palace on the Palatine obviously expresses the appearance of a strong monarchical element of government. A public building such as the Tabularium at Rome is an architectural manifestation of the Roman love of record-keeping order, under which colonies filed their city plans and census records were kept, for instance.

The nature of communal religious buildings indicates a great deal about religious practices and their role in public identity. The degree to which major religious buildings employed the experience of external and internal space may be explored for its connections with the nature of religion in a community. Some are buildings in which worshipers assemble, such as Mithraea, synagogues, mystery religion shrines, and churches. These often indicate religions with practices that are more private than public, oriented significantly towards individual experience and some element of mysticism. Other religious buildings are meant to be experienced primarily from the outside, and often serve as a backdrop before which the populace assembles to observe mass rituals or sacrifices. Classical temples and Mesoamerican pyramids, for example, serve this kind of role. These indicate public religions which had a large role in the reinforcement of community identification. Some religious buildings, such as Gothic cathedrals, combine strong elements of both internal and external design, and express both manners of religious identification. The profile of the spectrum of religious buildings in a community also carries meaning. A community's inventory of religious structures may include a single large structure (a cathedral in a medieval town), many small neighborhood-level shrines (the street shrines of Ur), or a group of mid-sized structures without a clearly dominating element (the several variously denominated churches of a traditional American community).⁴⁰ Naturally, a variety of combinations and emphasis is possible. Third-century Rome possessed all these kinds of religious structures. The Marble Plan testifies to the prominence of traditional classical temples in the city, as well as to the presence of

⁴⁰ Lampl (1968), fig. 56, reproduces a plan of a residential quarter of Ur in which small block shrines are a common feature.

small-scale street shrines throughout the city. The often underground Mithraea do not show up on the Plan, nor are Christian churches identifiable, but their presence is known through literature and archaeology and Rome's religious architectural fabric attests to a diversity of religious experience in the city, various components of which were far from necessarily exclusive, since a single citizen might participate in observances connected with more than one type of structure for different reasons, obtaining different kinds of experiences from large state-oriented rituals and small-scale individual-oriented practices.

A survey of residential building types is essential to comprehensive urban analysis, though this is often omitted or barely mentioned in the urban analysis of classical cities. While the comparative preservation of public buildings justifies emphasis on these generally much better-known structures (the Greek house is poorly known, for instance), the residential structure of the city must be aggressively approached in order not to derive from monuments alone a fanciful, unbalanced, and incomplete vision of the ancient city.

Factors to be considered, even with limited information, include the variety and range of magnitude seen in residential building types. Such factors may relate in more or less obvious ways to the level of class distinction realized in the studied city. Houses should be examined for a range of magnitude that may reflect status. Where such a range of magnitude is not found, a cultural situation may be inferred wherein status was expressed in other ways, and it may be presumed that architectural (and perhaps other material) manifestations of status were not acceptable. The degree of difference between the richest and poorest houses are indications of the range of economic class in a community. Sharp architectural class distinctions can indicate distinct social classes. Rome's significant distinction, for example, between private houses, *domus*, and apartment houses, *insulae*, both in terminology and in architecture, has already been discussed, and this is indeed a reflection of important class distinctions in the Roman world. The design and articulation of domestic space are at the heart of many deeply-held cultural values, and the exploration of residential structures as part of urban structure should not be disregarded.

Segregation/Integration

Segregation, in the context of urban form, concerns the investigation of whether some building types that are confined to certain areas because it is considered inappropriate for them to be near or adjacent to certain other things. Conversely, integration is the mixing of types, and different societies hold different values regarding architectural types that can be properly intermixed. A consideration of segregation and integration in urban form leads to conclusions about the studied population's views on the appropriate spatial delineation of certain categories, and this is an important reflection and index of the population's concept of meaningful categories and on their proper and improper association. Some categories that can be subject to segregation include the territory of the living from that of the dead; the dwellings of the rich from the poor, or of one race or religion from another; sacred from profane space; manufacturing zones from dwelling and other zones; refuse from activity zones; and socially unacceptable activities from space for the "general public." These and other possible segregation categories, and the ways and degrees to which they are manifest in architecture, are important indicators of social attitudes, and they can be investigated as part of urban form analysis. Segregation can occur with sharply delineated boundaries, or can be less precise but still important.

Modern American zoning philosophy is based on the notion that segregation of certain kinds of categories in urban development is very important. Economic classes of residence, for example, are carefully grouped and segregated from classes too far apart from them on the economic scale. Both our planning laws and our customs reflect this strong preference. Such segregation is a variable factor, and indicative of a population's willingness to live in a way that brings the high and low into close proximity.

American cities also segregate by function, in general carefully distinguishing light from heavy industrial zones, and these from commercial (retail) zones. A heavy industrial zone is kept well away from high-class residential zones, though often close to the lower-

class housing of the industrial workers. Even light industry is often segregated into “industrial parks.” Production is typically isolated from points of sale. Agricultural zones are defined and not typically integrated into zones of more intense residential or commercial development. Though there are now laws in place to control the imposition of racial segregation, the reality remains that much of residential urban America is strongly segregated by race.

All these segregation factors create local changes in the texture of urban fabric in American cities. While a given defined area may be reasonably homogeneous (there is usually *some* mixing of types), the urban fabric as a whole is quite diverse, and particular areas may be characterized by their distinctive features, and legitimately classified as “rich housing,” “poor housing,” “industrial zone,” and so on.⁴¹ While this is a feature of American urban fabric, it is not by any means a default norm for urban structure in general. Rather, the particular kinds of segregation and zonation in modern America represent a particular profile expressive of American culture. There is a wide variety of possible profiles, and wherever sufficient cultural and architectural information is available these profiles can be compiled for various cities.

Another way to approach the same issue is by asking which architectural forms the population under study is willing to integrate, since this is equally indicative of views on the proper separation of categories. American cities have a tradition of placing cemeteries on the outskirts of town, for example, but many cemeteries are within urban settlements, and the growth of cities to engulf former peripheral cemeteries is regarded as perfectly acceptable. This is a strong contrast to Rome, for instance, where the dead are scrupulously segregated from the living by laws which forbade burials within the pomerium of the city. The resulting expression of this value in urban form is the typical Roman pattern of “streets of tombs” radiating along routes out of the city, denser nearer the city gates. Tomb density often responded to the significant function of tombs as

⁴¹ This distinct predilection for architectural segregation in America contrasts in an interesting way with the emphasis on freedom in American culture.

advertisements of family status, and this message was best conveyed to the most people by siting them near activity corridors; at the same time tombs could not lie within the city, so they often came to line the streets leading into the city. It is interesting to observe the contrast here, that while American cities accommodate burial zones, tombs do not figure prominently in active life, and interaction with cemeteries is very limited in American society. Roman cities, on the other hand, segregate the dead apart from the living, and yet tombs are constructed with the premise that they will play as large a part as possible in active life, both for the benefit of the living and for the memory of the deceased.

The attempt to distinguish architectural type segregation and to note types of integration in a city supports a characterization of urban form that does not force the data into a predetermined category, and also organizes with an underlying principle the aspects of a city that may otherwise simply be described as part of a phenomenology, which may result in a compilation of individual traits that seem so idiosyncratic as to defy anything but subjective comparison to cities of other cultures. In seeing architectural segregation for what it is, objective assessment of urban fabric becomes possible in a way that fosters direct comparison of cities.

Concentration/Dispersal

Another approach that can help to direct efforts to identify distinctive aspects of urban form is to look for the degree of concentration or dispersal of various architectural types, and to ask what makes the concentration or dispersal appropriate in the studied city. Technology of transportation can have a powerful effect on the concentration or dispersal of certain types of architecture. The convenience of automobile transport, for example, has led in many modern cities to the wide dispersal of dwellings for those who work in the city center. Prior to automotive transportation, it was typical for people to want to live close to their place of work, leading to worker cities around factories of the early industrial revolution, for example. A settlement characterized by pedestrian traffic only is more

likely to have small-scale commerce scattered throughout the residential areas, while automotive transport tends to foster the concentration of commerce at certain nodes. Practicalities related to the transport of cargo often predictably concentrate architectural forms such as warehouses and loading facilities at points near ports.

Some kinds of concentration are not dictated by practicalities, but from a desire for association with preexisting buildings. This leads to many kinds of ceremonial centers in cities ancient and modern, where buildings meant to reflect or inspire civic pride are often grouped together in a concentration that creates a greater impression than the individual buildings would be able to do separately. This kind of accumulation can occur with the abstract goal of promoting civic spirit or identification, or it can arise through the desire of the builders of individual constructions for their buildings to be associated with preexisting monuments. The complex of fourth dynasty pyramids at Giza, or the Archaic mastaba field at Saqqara are concentrations of this latter sort.⁴²

Concentrations, whether arising from practical or cultural reasons, are another way in which urban fabric can acquire distinctive character in different parts of a city. A zone of one type of architecture can result from segregation, or from concentration, and it is important to attempt to distinguish between the two by examining the available sample of urban fabric for evidence to identify the controlling factor. A concentration of artisans of the same type may arise if some aspect of their work, attendant smell, or smoke, for example, is considered undesirable. In this case, segregation accounts for the homogeneity in the zone. Alternatively, the artisans may be grouped around access to a resource, such a kiln or water source, or a traditional market area, in which case simple practical concentration is indicated as the governing factor. Other parts of the urban fabric may be examined to discover whether such workshops can also occur in association with other types of urban fabric, to assist in distinguishing the reason for the concentration.

⁴² These necropoleis are not exactly urban areas, but the issue is complex in Egypt.

“Catchment zones” of residence areas may lead to the dispersal of commercial features. Dispersal also occurs in order to keep all points in a large region within a certain distance of, for example, fire stations. The distribution of fire stations in Rome was governed by this practical intention, and *excubitoria*, substations for the fire brigades, were located in every region.⁴³ Other city amenities may be distributed in similar fashion to provide service within a short distance to many citizens. The Imperial *thermae* of Rome were distributed throughout the city in a fashion that seems intended to place at least one conveniently near almost every particular residential zone.⁴⁴ Dispersed features indicate either a practical or convenience-based need for the feature in the distributed area (fire stations and *thermae*), or features for which people were unwilling to travel very far (general small-scale commerce), or features tied into localized small sub-communities (such as neighborhood shrines or small baths).

The Image of the City

Urban form expresses an image to the inhabitants of a city, of which they may be more or less aware. Image can exert strong influence on the way the city is built, affecting for instance feelings of what should be segregated or concentrated in a city. An understanding of the image of a city in the minds of its citizens lends perspective to assessment of the city and can offer explanation for many aspects of its form. Features that defy practical logic may find explanation in an understanding of the power of the city’s image. In Rome, Septimius Severus’ Septizodium, a colossal display facade that served no practical purpose, is an example of such an urban feature. Grid plans enforced by authority in topographic areas where they are completely impractical may owe their origins to the authority’s concern with the appearance of city; image can outweigh practicality in urban

⁴³ Baillie-Reynolds (1926).

⁴⁴ MacDonald (1982), p. 131-133 observes the dispersal of large public buildings as a characteristic feature of Roman urbanism, specifically citing baths, entertainment buildings, and temples. This is an important observation, but it is equally important to observe the (corresponding?) concentrations of monuments, statues, and “urban articulation” (porticoes, arches, etc.) in a Roman city center, typically around a forum. Only certain kinds of buildings were typically dispersed.

form as easily as in any other aspect of human endeavor. The interpretation of urban form seeks to relate city structure to culture, and discern the ways in which the built city is an expression of the building culture's values and beliefs. In such a framework, an understanding of what the city meant to its inhabitants and builders is of great interest, as it can inform the interpretation in important ways. Marcus, for example, has shown how the archaic Mesoamerican conception of "city" differed significantly from the modern conception, focusing most strongly on the limits of territory controlled by an authority based in a particular area, rather than on the contrast between the built-up conurbation and the countryside that we are accustomed to making.⁴⁵ Fortunately in this instance, our modern distinction between "city" and "country" is heavily influenced by the Roman conception and distinction between *urbs* and *rus*, so our preconceptions are not inappropriate to the present study. But an understanding of the image of a city in the mind of its population assists in properly relating the city's built elements to its builders' values, beliefs, and priorities.⁴⁶

These are only a few factors worth examining in the study of urban analysis, but they can assist in the isolation of comparable aspects of cities without forcing them into classificatory schemes that mask real variation, and they can help to guide observation usefully in the face of the detail and idiosyncrasy presented by cities when studied in any depth. While the Marble Plan can provide evidence to evaluate some of these factors in ancient Rome at a microstructural level, the Plan's extremely fragmentary state precludes any broad assessment of the city at a macrostructural level. Although some parts of the city (such as the shores of the Aventine) are reasonably well-represented by adjacent or nearly joining fragments, for the most part the individual sample "windows" offered by

⁴⁵ Marcus (1983), p. 206-208.

⁴⁶ The image of Rome has been an issue of both ancient and modern interest, from Vergil's poetic framing in the *Aeneid* of Rome as a site destined to rule the world to many modern considerations of the image of Rome in ancient literature, rhetoric, and popular feeling. Thompson (1971) collects ancient, medieval, and Renaissance passages in a good introduction to the topic.

the Plan are too small to study the structure of the city as a whole. Again, the loss or inaccessibility of actual architectural remains means that field archaeology can offer little assistance. However, another under-utilized extraordinary source of topographical data exists which is particularly well suited to complement the Plan's shortcomings in the area of urban macrostructural information. Together the two sources support understanding of the city's form at both levels. This additional resource is the collection of documents called the Regionary Catalogues.

The Regionary Catalogues

Introduction to the Regionary Catalogues

The Regionary Catalogues are a special topographic resource which provide vital assistance in the urban assessment of ancient Rome. The Regionaries, though frequently given passing mention, are almost never engaged in depth, and important aspects of these documents have never been explored.⁴⁷ They are often grouped together with the Marble Plan as primary ancient sources on Rome's topography. Yet while the Plan is at least dealt with at some levels, the Regionaries have been almost scrupulously avoided in scholarship, and even their nature is rarely made clear.

The Regionaries take their name from the fact that for the most part they present information organized by individual city regions, named and numbered in sequence.⁴⁸ The fourteen regions of Rome were established by Augustus in 7 B.C. as part of his

⁴⁷ Principal works dealing with the Regionaries are: Jordan (1907), still important, and reprinted in 1970; Nordh's (1936) assessment, which undertook the critical analysis of the manuscript tradition for the Regionaries; Von Gerkan (1949), who dealt especially with determining the boundaries of the regions based on the evidence in the Catalogues; and Hermansen (1978), who offers a useful retrospective on scholarship regarding the Regionaries, including outlines of the principal debates. Apart from these works, the Regionaries have been discussed in this century almost exclusively as sources of figures for population estimates of Rome.

⁴⁸ The regions acquired their unofficial names, to accompany their official numbers only late (Nicolet 1991, p. 197). I alter the name of one of these regions for familiarity's sake in discussion--Region IX is called Circus Flaminius in the Catalogues, but I render it here as Campus Martius, since the region encompassed that area, and it is important to realize that Region IX extended far beyond the Circus Flaminius, which lay near one of its edges. I translate Region XII *Piscina Publica* as Public Pool, since the Latin term is not common parlance even in topography. For the other regions I employ either the Latin designations or familiar direct English translations.

administrative reorganization of the city.⁴⁹ The regions are city wards of irregular shape and size. Region by region, the Catalogues first present a list of landmarks. The monuments recorded throughout the Regionary Catalogues are the basis for dating them to the fourth century. Following each region's landmark list is a short list of statistics tallying a consistent set of ten features that include neighborhood shrines (*aediculae*), houses, fountains, and so on, along with a measurement of the region's circumference in Roman feet (*pedes*). At the conclusion of the fourteen regionary lists, there follow two appendices. The first is a set of ten more tallies of features, in these cases for the whole city. This list includes such items as hills, bridges, aqueducts and prominent roads. These are features not tallied in the region-by-region lists, and in this first appendix all but one category is enumerated; for example, each of the 19 aqueducts tallied is then named. The second appendix is called the *Breviarium*, or "summary," even though it summarizes information mostly not contained in the previous regionary lists.⁵⁰ This second appendix continues the tallying of further features of the city, including the numbers of city gates, theaters, and equestrian statues, and is distinguished from the first appendix only in that the *Breviarium* provides only numeric totals, without specifying the individual items tallied. The *Breviarium* includes citywide totals for the ten categories previously listed in the individual region lists. The total number of features of the city tallied in the two appendices is 43.

There are two versions of the Regionary Catalogues, the *Curiosum Urbis Regionum XIV* (inventory of the city's fourteen regions) and the *Notitia Regionum XIV* (catalogue of the fourteen regions). Both the *Curiosum* and the *Notitia* present the same information with minor variations, such as unique inclusions or omissions, or variations in the figures recorded. A long-running debate has concerned the relative dates of the two versions of

⁴⁹ The regions take their name from the Latin term employed for them, *regiones*. Augustus' institution of the fourteen regions (the *regiones quattuordecim*) is recorded in Suetonius *Augustus* 30.1, and in Cassius Dio 55.8.7. Nicolet (1991), pp. 196-204, discusses the political implications of the organization of the city in this manner.

⁵⁰ This discrepancy is evidence that the Regionary Catalogues as we have them derive from some earlier, more complete form.

the Catalogues.⁵¹ A key point is that the *Notitia* counts only five obelisks in Rome, but it does mention the equestrian statue of Constantine, which stood in the Roman Forum from A.D. 334.⁵² This provides a *terminus post quem*. The *Notitia*'s list of obelisks lacks the second one erected in the Circus Maximus (Rome's sixth and largest stolen Egyptian obelisk), which was set up by Constantius in A.D. 357; this gives a *terminus ante quem* and brackets the *Notitia* between A.D. 334 and 357.⁵³ The *Curiosum* counts all six obelisks, dating it to after A.D. 357. Hermansen notes that there are a number of omissions in each version of the Catalogues, and warns against dating on the basis of the omission of one obelisk in the *Notitia*.⁵⁴ But the obelisks were particularly notable monuments and it seems unlikely that there would have been an error in such a case, especially since they are enumerated and the height is even specified; further, for the omission to be random it is unlikely that the one omitted would just happen to be the final obelisk to be brought to Rome. It would seem that the relative dating value of the obelisk difference is real, and that the *Notitia* is slightly older in origin than the *Curiosum*.⁵⁵ Overall, however, the temporal difference between the two versions appears to be inconsequential. There is no consistent pattern to the differences between the two lists that suggests a re-tallying based on later data in the *Curiosum*, except for the obelisk count. The two lists are effectively versions of the same original, and since the *Curiosum* has been identified as the older manuscript tradition, it is the list primarily followed here.⁵⁶

⁵¹ Nordh (1936), pp. 124ff., surveys this debate, as does Hermansen (1978), pp. 140-145.

⁵² The statue was dedicated by Anicius Paulinus, the urban prefect (CIL 6.1141=ILS 698).

⁵³ The emplacement of this monolithic obelisk (the largest in the world) by Constantius is recorded by Ammianus Marcellinus (16.10.17, 17.4.18) and Cassiodorus (Var. 3.51.8). The obelisk was rediscovered in 1587, and then re-erected by Pope Sixtus V near the Lateran palace (D'Onofrio, 1967).

⁵⁴ Hermansen (1978), p. 143.

⁵⁵ The *Curiosum* has a number of Late Latin spellings and abbreviations, as compared to the *Notitia* which presents more classical orthography. Hermansen is probably correct in interpreting this as due not to relative dates (the two cannot have been very far apart) but to recopying of the *Notitia* manuscripts during the Carolingian reform period, when language was 'rectified' to the standards of classical times (Hermansen (1978), p. 141).

⁵⁶ Nordh has shown that the *Curiosum* is the older manuscript tradition (Nordh (1936), pp. 8 and 11). For the graphs and maps that follow here, the *Curiosum* data are given priority, but the *Notitia* figure is also presented where there is a discrepancy between the two.

Purpose and genre of the Regionaries

The origin and purpose of the Regionary C atologues have remained enigmatic. They are customarily assigned to the office of the urban prefect, since the data upon which the Catalogues are based, city statistics in large part, would seem naturally to fall under the purview of the prefect. However, this observation does not really contribute to explaining why the Regionaries were compiled. Hermansen compared the Regionary Catalogues to the *Notitia* of Constantinople, an ancient landmark catalogue for which its own introduction provides important context.⁵⁷ That introduction explains that the list was compiled to display the glory of the city, and the *Notitia* of Constantinople became something of a tourist guide in what became a laconic medieval tradition of tourist objective lists (e.g., the *Mirabilia* for pilgrims to Rome).⁵⁸ Hermansen places the Regionaries squarely in this tradition, in origin and in purpose, his three pillars of evidence being “the casual and unsystematic addition of curious information about some of the listed items; the spare style which is recognized in medieval lists which are known to have served as tourist guides; the close similarity to the Constantinopolitan *Notitia*, which admits to having been written for outsiders.”⁵⁹

Hermansen makes a good point, but there is more to the story. The explanation thus far does not really account for the inclusion of data that, it must be admitted, would be of no interest to the tourist (the number of bakeries in each and every region of Rome?), nor for the scrupulous compilation of such unspectacular details as the numbers of warehouses and latrines. While the Regionaries no doubt served as a model for the *Notitia* of Constantinople, and could indeed have been the genesis of the medieval tourist guide lists as Hermansen suggests, these later applications of the style are insufficient to explain the origin and particular character of the Regionary Catalogues.

⁵⁷ Hermansen (1978), pp. 136-138.

⁵⁸ Hermansen (1978), pp. 135-8.

⁵⁹ Hermansen (1978), p. 138.

I propose that the document to which the Regionary Catalogues are most meaningfully similar is the Severan Marble Plan. Clearly in both cases the compilers had access to detailed information about the city from official administrative documents that contained great detail on a variety of subjects (but which were not compiled expressly for the uses to which we see them put). In both cases the purpose was clearly to present a catalogue of Rome's magnificence, yet in both a great quantity of inconsequential detail is also present that clearly relates to the documents' origins in administrative records. Both documents emphasize the grand monuments and downplay the residential and commercial matrix of the city (e.g., the Plan with its graphic emphasis symbols for temples, the Regionaries with their primary and specific naming of landmarks), yet both documents also do not fail to omit the details regarding the non-monumental matrix, and are in fact rather scrupulous about including this information and getting it right. Both documents appear to have owed their genesis to the opportunity for such collation and display provided by the existence of official administrative documents already compiled through the operation of standard traditions of Roman record-keeping. But, while other stone plans (as examined in Chapter 1) provide ample evidence of an official architectural recording tradition pre-dating the Marble Plan, is there any real evidence that the sort of information found in the Regionary Catalogues was collected by Rome at earlier periods in the course of administrative record-keeping? The elder Pliny provides the answer in his reference to the census of Vespasian and Titus in A.D. 73.⁶⁰ The control of citizens' formal social status is perhaps the most familiar aspect of a censor's duties, but as Pliny informs us, Vespasian and Titus carried out a census of the city as well. Pliny records some of the data thus gathered: the circumference of the city within the walls and the number of its regions, hills, neighborhood shrines, and gates, as well as several mileage figures for distances computed within the city. This is *precisely* the kind of inventorying that appears later in

⁶⁰ Pliny *NH* 3.66.

the Regionaries.⁶¹ The explanation of the Regionary lists is virtually the same as that for the Marble Plan: a long-standing Roman administrative record-keeping tradition was abstracted into a form that displayed the magnitude of the great city, and which was aimed at both residents and visitors.⁶² Without specific utilitarian purpose, they contributed to the image of the city as magnificent, and simultaneously asserted the power and knowledge of the administrative organization that made the collations, and the way of life experienced in Rome, possible. The main difference between the Regionaries and the Marble plan is that the Regionary Catalogues were easy to imitate and duplicate, and so gave rise to direct imitations (the *Notitia* of Constantinople) and derivations (the medieval tourist guide lists). The *Forma Urbis*, conversely, required extensive technological and administrative support for the gathering of the data on which it was based, and then additionally significant resources to execute the collation in a form that preserved the detail available, and so it was never imitated.

In light of this similarity of origin, it is fascinating to consider the way in which both the Regionary Catalogues and the Marble Plan record, emphasize, and structure certain information. The Regionaries, no less than the Marble Plan, provide information about the urban form of the city, especially in their statistics; both offer objective data about Rome. But both are also, in their selectivity, emphasis, and structure, expressions of what Romans considered the identity of the city to be. The two records form a remarkably complementary pair. Just as the Marble Plan stands as a nearly mute testament to the city, forming its image in almost purely graphic ways, so the Regionary Catalogues are the verbal counterparts to this image, restricted to letters and numbers, conjuring an image of the same city through words and tallies and organization. The congruence between the two resulting descriptions shows that the choices made in the composition of these images of the city were not casual, but expressive of important conscious or subconscious

⁶¹ Of the early stages of this tradition, Nicolet (1991), p. 197, notes that “in 46 B.C. Caesar had taken a census of the inhabitants of Rome *per dominos insularum*, and that the *Tabula Heracleensis*, dated between 75 B.C. and 45 B.C., inevitably suggests the existence of a cadastral plan or book of the *urbs*.”

⁶² Including some data in each case that was redundant to residents, and some that was obscure to visitors.

conceptions of what the identity of the city was to the creators of these descriptions. The complementarity of the two very different forms of record is illuminating, and the significance of the structure of the image of Rome contained in the Regionaries is a rich and untapped mine. At this time I will pass over the landmark lists, as their study would immediately become too specifically topographical for the present more general aims. Here I will examine the conception of the city as revealed by the choices of categories for the statistical lists included for each region. At first glance these are merely urban statistics, but on closer inspection they are a window to the ancient conception of the identity of Rome as a city. The Regionary Catalogues are fundamental instruments for the study of Imperial Rome, and here take their proper place in the assessment of Rome's urban structure and of the city's image.⁶³

Image of the city in the regionary tally lists

The particular categories selected for inclusion in the Regionary statistics lists and the order in which these categories are presented reveal the way in which the identity of Rome was structured in the mind of the compiler. I will here consider these ten entries in order.

The first entry for each region records the number of *vici*, or formal neighborhoods. All of the first four categories in the statistics lists relate to this administrative sub-division of the regions. *Vici* were originally considered to be minor streets, but in the sense employed here the term referred to neighborhoods, normally centered on intersections. Augustus codified what had been a long-standing tradition of neighborhood identities into the formal *vici* during his reorganization of the municipal administration (and the fourteen regions) in 7 B.C.⁶⁴ The *vici* served organizing divisions for various public services, including the enforcement of security regulations in the wake of the fire of A.D. 64, the

⁶³ Well over a century separates the original of the Severan Marble Plan from that of the Regionary Catalogues. However, the structure of Rome does not appear to have changed greatly in the intervening years, nor does the city's composition seem to have been significantly altered. With the understanding that the Marble Plan and the Regionaries actually offer views of Rome in two successive centuries, the Regionaries are here used in conjunction with the Plan to explore a composite image of the city.

⁶⁴ Suetonius *Augustus* 30.

distribution of water, the census, and the *annona* distributions of grain.⁶⁵ Interestingly, in the Regionary lists, recognition of this administrative structure takes first place. The *vici* and their significance would have been meaningless to a tourist, but no doubt every citizen of Rome knew his own neighborhood. After the landmarks of the city, underlying them all, were the *vici*. The priority of the identity and administrative structure provided by the *vici* is repeatedly emphasized in the categories immediately following. Three names of *vici* appear in partial inscriptions on the Marble Plan (Fig. 4.10), identifying the *vicus* as one of the most significant elements on the Plan, since relatively few features were given the prominence of an inscription.

The second entry, appearing immediately after the number of *vici*, is the number of *aediculae*, or neighborhood shrines.⁶⁶ There was one of these for each neighborhood, the shrine of its *genius loci*. Neighborhoods derived a sense of identity through the cult of a local shrine. In Rome, invariably there was one and only one shrine, for every neighborhood. Therefore, the number recorded in the second entry is completely redundant, as it is always a repetition of the first entry. But this redundancy is far from constituting a lack of further information for us; the repetition is significant. The entry stands as the second most prominent entry in the entire list, affirming that for each and every neighborhood there *was* a neighborhood shrine, without exception. It appears that this fact was quite worthy of emphasis to the compiler of the Regionaries. The repetition was an assertion that everything was complete and in its place. This completeness, along with the shrines and the *vicus* structure itself, must have been regarded as important to the city's identity for it to take such a prominent place in the list.

The Marble Plan illustrates a probable neighborhood shrine at a street intersection (the preferred location for both kinds of features) in fr. 11c(=608). Another feature, which

⁶⁵ Nicolet (1991), pp. 196ff. discusses the role of the *vici* in administrative organization.

⁶⁶ The *vici* were originally based on neighborhood organizations designed to observe the worship of the *lares compitales*--crossroads deities (Robinson (1992), p. 11), and their shrines became the *aediculae*. Household *lares*, an even more specific form of locational deity, were worshiped at shrines in the homes of the wealthy.

may be an *aedicula*, a fountain, or a combination of both, appears set into an alcove at the side of a street in fr. 37Aa. Figure 4.11 illustrates both these fragments. Laurence's study of the urban fabric of Pompeii showed that where space permitted, fountains were located near *aediculae*.⁶⁷ Both kinds of structures were important foci of local (*vicus*-level) identity.⁶⁸ The Plan shows their microstructural occurrence, the Regionaries emphasize their importance in a macrostructural system.

This approach is further developed by the third category in the lists. This entry gives the number of *vicomagistri* for each region. *Vicomagistri* were the men responsible for the upkeep of the observances at the neighborhood shrines, who also apparently had some administrative functions and acted as intermediaries between local citizens and higher authority.⁶⁹ The number of men so assigned varied over time. Originally (in the scheme of Augustus) there were four *vicomagistri* for each neighborhood, elected annually by the inhabitants of their *vicus* and representing the four blocks around the ideal intersection that served as the focus for a *vicus*.⁷⁰ This was later codified to a total per region rather than a number per *vicus*. In the fourth century there were 48 *vicomagistri* for every region.⁷¹ This was, at the time, invariable. Yet the figure is repeated for every region, over and over again in complete and entirely predictable uniformity, and occupying the prominence of the third entry slot. This would seem to be an irrelevant statistic for a regionary inventory, since it required no stock-taking: it was a figure established universally for all regions from the law books. The repeated entry of the 48 *vicomagistri* establishes the human aspect of the *vicus* structure, connecting it with the living municipal administration. The *vici* organize the city, each is given a focus by its shrine, and that shrine is attended by appropriate personnel. The repetition of the figure emphasizes the regularity and completeness of the human structure.

⁶⁷ Laurence (1994), p. 44.

⁶⁸ As observed by Laurence (1994), p. 46.

⁶⁹ Robinson (1992), p. 12. On the functions of the *vicomagistri* see Nicolet (1991).

⁷⁰ Pliny, *NH* 3.5.66, and Robinson (1992), p. 12.

⁷¹ Bleicken (1958) shows that total was reduced from 1060 to 672 probably under Constantine.

The fourth entry lists the number of *curatores* for each region. These men, chosen by lot from the pool of appropriate candidates, acted as overseers to the *vicomagistri*, and in the time of the Regionaries there were always two *curatores* per region. The repeated assertion of two *curatores* for every region is therefore to be interpreted like the third entry. The first four entries in the regionary statistical lists form a remarkable opening volley that emphasizes the prominence, in the mental conception of Rome, of the city's administrative division structure (the *vici*), its complete counterpoint in the real world with architectural manifestations of the administrative designations (the *aediculae*), and with the human element present to administer, regularly organized and in full complement at every turn (the *vicomagistri* and *curatores*).

From here the lists proceed to civil census data. First and foremost of the building types recorded are *insulae*, apartment buildings (the fifth category), followed by *domus*, private houses (the sixth). In other words, after the organization of the city is established by the first four categories, residence is established within that organization. The prominence of dwellings as the first building type to be recorded here, and the fact that *insulae* are recorded first serves as a reminder of the prominence of *insulae* in the ancient Roman experience of the city. The *insulae* have vanished for the modern observer, appearing neither in Rome nor in standard works describing the topography of the city, nor yet even in many visual reconstructions of the appearance of Imperial Rome. But in the ancient city they were an overwhelming presence, and the tallies of thousands of them recorded in the Regionaries must be read for the tremendous mass of construction that they represent, and which is reflected in many fragments of the Marble Plan (Fig. 4.12). It is not surprising that dwellings form the first pair of building types recorded in the Regionary statistics lists; and it is interesting that *insulae*, though lower-class and often regarded by both ancients and moderns as an embarrassment to the city, are listed *before* the more stately private houses of the wealthy. It seems reasonable to read in this

arrangement a response by the compiler to the pervasive presence of *insulae* in an image of the city based on real experience.

The division of residence tallies into categories of apartment houses and private houses follows standard Roman usage (as has already been discussed, in Chapter 3), recognizing the important class distinction between those who rented and those who owned their dwellings. These two categories were more than two different types of architecture; they were two different levels of existence. Despite the inevitable borderline cases, the sheer contrast between the numbers of *domus* (always under 200) and the number of *insulae* (always several thousand) makes the point that the *domus* were a distinct, concrete manifestation of the superior social standing, power, and resources of the elite class. It would have been virtually inconceivable for the Roman compiler of the Regionaries to tally dwellings in a way that indiscriminately mixed private houses and apartment houses.

After residential buildings, the next category in the statistics lists is perhaps surprising: the seventh entry for each region is a tally of the warehouses (*horrea*) it contained. Considering how few categories were tallied (ten total, and only six building types), each choice must count as significant, and warehouses apparently not only rated inclusion but rated reasonably highly. This prominence must relate to the place of the *horrea* in allowing Rome to survive. The mass population of the city was completely dependent on foreign shipments of oil, wine, and grain. The flow of supplies into Rome was an issue of great state and public concern, and the large state-owned warehouses were vital in making this flow possible.⁷² The large Imperial warehouses were concentrated in two regions on the lower Tiber shores, but warehouses are tallied (and do occur) in every region. It is possible that in this should be read a recognition of the significance of *horrea* as part of the economic infrastructure of the city, although this seems strange when it is considered that the thousands of *tabernae* and small workshops that really characterized the city are omitted in these lists. In light of the absence of these other general commercial categories,

⁷² Stambaugh (1988) discusses the flow of supplies into the city and contains a useful bibliography of pertinent research in his notes, esp. to pp. 143-146.

the most likely explanation of the inclusion of warehouses is connected with the vital role they played in Rome's survival. It is not known how many of the smaller warehouses throughout the city were involved in distribution or storage of the resources initially unloaded into the giant warehouses below the Aventine and on the Trans-Tiber shores. The inclusion of warehouse tallies for every region indicates an acute awareness of them all over the city, and suggests that they may have been involved in the average citizen's experience of the state food supply distribution system in ways not yet understood, since their role in small-scale commerce seems insufficient to explain the category's inclusion and prominence in the lists.

The eighth category in the Regionary statistical lists is *balnea*, small baths. As discussed above (Chapter 3), the bath is one of the most Roman of amenities, and these are justly famous from the ancient world in their incarnations as vast Imperial complexes of unsurpassed magnificence and luxury. The great Imperial *thermae* brought the experience of luxury within the reach of all but the very lowest stratum of society. But the bath ethos extended far beyond these great showplaces, and the Regionaries attest that small baths, *balnea*, were a ubiquitous neighborhood phenomenon. The fame of the several great Imperial bath complexes should not eclipse an awareness that hundreds of small baths were deeply woven into the urban and social fabric of Rome. Their presence in the statistical lists can be taken as an indication of how essential the Romans considered baths for proper urban existence. Most aqueducts to Roman cities throughout the empire were built not for drinking water supply, but to feed baths large and small.⁷³ Baths were integral to a city's *romanitas*, and it is entirely in keeping with their importance in the Roman urban experience that they should be one of the city features tallied in the Regionary statistics.

After baths appear fountains (*lacus*), the ninth category in the lists. The fountains referred to here are those of the city water supply that had a primarily utilitarian purpose

⁷³ Hodge (1989), p. 128. Once built, of course, aqueducts were used to augment or replace a city's existing drinking water supply as well.

(though also often decorated). Nineteen aqueducts served Rome in the fourth century A.D., but private plumbing was a comparative rarity.⁷⁴ For nearly all of Rome's inhabitants, water came from street fountains. Street fountains of this type are well known from excavated Roman cities such as Pompeii (Fig. 4. 13). The provision of fountains was a measure of basic city infrastructure. Water supply, taken for granted in modern Western cities, was always a serious concern in ancient cities, and water-gathering points, whether wells, spring houses, or fountains, were vital resources and were often social foci as well (as mentioned above), since they were natural meeting points.⁷⁵ It is not surprising that fountains were tallied in the Regionary lists, given their significance as part of the urban structure.⁷⁶ This recognition appears also on the Marble Plan, where examples of street fountains may be discerned (Fig. 4.14), even though architecturally these were extremely minor constructions, which would almost certainly have been simplified out of the Marble Plan engraving if the experience of their importance were not so basic to the designers and executors of the Plan.

The tenth and final category in the lists is *pistrina*, bakeries. The word *pistrina* could indicate both a place where bread was sold, and also a place where grain was ground into flour (many bakeries in Rome would have had both aspects). Bakeries, with their distinctive grinding mills, are familiar sights from Ostia and Pompeii. The prominent tomb of the Late Republican freedman baker M. Vergilius Eurysaces, outside the Porta Maggiore in Rome, records in reliefs many details of the operations of baking, and has assisted modern understanding of the ancient Roman baking (and of the profit that could

⁷⁴ The right to draw water from the public aqueducts was overseen by censors and aediles, but the contractors who actually maintained the aqueducts were subject to bribery on this matter, and the famous water commissioner Frontinus complains about many violations he discovered on his personal inspection of the matter of illegal water taps (Frontinus 29). On the public water supply and its management, see Robinson (1992), pp. 95-105.

⁷⁵ Street fountains have accordingly served as a basis for studies of ancient neighborhoods--see Jansen (1991), Nishida (1991): 91-8, Eschebach (1979), Eschebach and Schäfer (1983), and Mygind (1917) and (1921).

⁷⁶ Laurence (1994), p. 44, observes that there was "a cultural demand for good clean aqueduct-borne water in Augustan Italy." Street fountains were an asset in which a city could take pride.

be made in such an industry, considering the tomb's grand proportions).⁷⁷ Bakeries as a category are not included as simply a representative of the hundreds of small commercial enterprises occurring in the city; nor are they included from familiarity (they would have received daily visits from most inhabitants of the city). Their place in the Regionary statistics comes from their role in the basic survival of Rome's citizens. Recipients of the *annona*, or state grain dole, would take their rations to bakeries to have them converted into bread, directly participating in the flow of resources managed by the state to sustain the massive population of the city. Bakeries therefore took on special significance as cornerstones of the city's survival, this basic aspect of their role perhaps especially underlined in Rome, where awareness of the grain flow and its importance (and of the *horrea* that housed it) was intense.

This review of the categories selected for the regionary statistical tallies reveals an image of the city with interesting implications. The inclusion of bakeries as the single small industry to be tallied casts light on the rationale behind the inclusion of the other categories. The regionary tally is a list of fundamentals for survival. The final pair of categories concerns bread and water, the most basic of sustenance. These explain the way in which the significance of the other categories should be regarded, and it is therefore fascinating to observe the strong emphasis in the first four entries on the *vicus* structure of the city, its organizing nature which provided local identity; the physical foci (*aediculae*) that asserted the concrete reality of this identity in every case, the personnel (*vicomagistri*) who were the official human dimension of this structure, and those magistrates (*curatores*) who connected the *vicus* level of identity to the next highest level, that of the regions. The implication that this organization was considered to be of primary importance for the life of the city's citizens is striking.

⁷⁷ See Nash (1968) 2.329-32 and Rossetto (1973) on this tomb.

It is only once this organization is presented as fully manifest and entirely complete in all its forms that the list moves to the provision of residence. In the fifth and sixth categories, the class gulf between housing renters and owners is expressed, while the prominence and magnitude of the *insulae* in the experience of the city is acknowledged. The citizens, once housed, look to the seventh category, warehouses, for sustenance. The character of the latter part of the list strongly suggests that this seventh category recognizes the role of the *horrea* not simply in general commerce but in maintaining the life-giving supply lines of the city. In this context it becomes quite interesting that small baths are accorded the eighth category. Their place in this list marks them as not a mere luxury (as perhaps the Imperial *thermae* were) but as basic to the existence of the city, because they supported the social interactions at the neighborhood level and below (for there were more than twice as many *balnea* as *vici*). *Balnea* too must have been points of identity, and their social role so fundamental as to be thought vital. It is only after the presence of these baths is established that the citizens are provided with water and bread, via the fountains and bakeries in the ninth and tenth categories. This, then, is one way of framing the city's identity. An eleventh category, simply entitled *pedes* (feet), records the circumference of each region, providing closure and boundary to the parcel of identity just defined. After this entry the reader is next confronted with the landmark list of the next numbered region, the fourteen in order that, as a whole, constitute Rome.

In the inclusion of this careful inventory of hundreds of individual humble structures like bakeries and warehouses, we see a reflection of the outlook that produced the decorative and symbolic Marble Plan. As we have seen, the Plan served a propagandistic purpose as a graphic catalogue of the magnificence of Rome, with its monuments standing out prominently from the city matrix by virtue of the graphic approach taken to their depictions. Like the Regionaries, the Plan offers most prominently a display of the great landmarks of the city, entitled individually. But it is most interesting that the two works are also similar in their studied inclusion of the basic matrix of the city from which these

landmarks rose, and within which the city's inhabitants existed. Either list might have omitted the most humble aspects, the less showy statistics. Yet both include them. Perhaps anonymously, but in both cases every one is represented. Every ground floor room appears on the Plan, and every single bakery and apartment is included in the Regionaries. They are not represented by a typical example, or merely summarized nor symbolized, but one by one they make their mark in each document. This is a fascinating parallel concern, and a surprisingly consistent outlook on the identity structure of the city.

Intangible administrative organization factors are much more highly emphasized in the Regionaries (in their regionary organization, and in the initial focus in the tally lists on the administrative divisions and personnel) than on the Plan (although as was noted, at least some of the *vici* were identified with inscriptions on the Plan, which are a strong mark of significance).⁷⁸ Perhaps the original context of the Plan should be seen as supplying ample emphasis on these aspects of the city. The Plan was integrally part of its built environment, and it is incorrect to consider it as if it could be abstracted from that setting. As has been discussed, the Plan appears to have decorated the wall of a room most probably dedicated to the archives of city maps. These would doubtless have been organized by region and *vicus*, and the indications of these organizational divisions would have surrounded the observer of the Plan as it originally stood. Taken together with its environment, the Plan *was* invested with statements of the intangible organizational aspects of the city, and even in this regard can be seen as parallel to the Regionary Catalogues.

The appendices to the Regionary Catalogues

The first appendix to the Regionary Catalogues forms a city inventory of ten kinds of urban features, assets in which the city took pride. These range from geographical features (hills) to showpiece monuments (obelisks), to items of useful urban infrastructure

⁷⁸ On the inscriptions: Colini (*PM*), p. 172.

(bridges and aqueducts) to urban amenities (basilicas and libraries) and luxuries (great *thermae*). This list even includes things that exist by the absence of other things, namely *campi*, or open fields, a departure from the focus on built forms seen in the Plan.

These items were tallied in the first appendix rather than in the lists for the individual regions since there were relatively low numbers of each, and as ones and twos distributed throughout the regions they would not have seemed as impressive as these tallies of, for example, eleven *thermae* or six obelisks. It is because these were boastful lists that it mattered how impressive the tallies looked, and therefore why they were grouped here instead of distributed throughout the regions. Other features crossed through multiple regions (aqueducts, hills, main streets) or occurred between regions (bridges and other main streets) and so fit better into this whole-city tally list, still rating as monuments or assets worthy of pride.

In the *Breviarium*, or second appendix, there appears first a recapitulation of elements usually already mentioned as landmarks in the individual regions. Hence tallied in ones and twos are amphitheaters, circuses, monumental statues, arches and columns, even great *macella* (food markets). Following this list is a totaling of the region-by-region tally lists, in the same order as they were presented before. Here it is noteworthy to observe that two additional categories are provided: brothels (46/45) and public latrines (144). These two categories are perhaps grouped together by their “less-seemly” nature, and avoided in the individual region tallies for the same reason.⁷⁹ They almost seem like humorous inclusions in light of the prideful or serious nature of the rest of these lists, and very possibly represent a wry admission by the compiler of the magnitude of the city even in these most earthy categories.⁸⁰ The final tallies in the second appendix are of the soldiers, watchmen, firemen, and their various camps throughout the city.

⁷⁹ On privacy and toilets in Rome see Scobie (1988).

⁸⁰ They were included in the administrative records from which the Regionaries were drawn because they were taxable.

Reliability of the Regionaries

For studying the image of the city the accuracy of the figures listed in the statistical catalogues has been irrelevant. However, if accurate, these figures open possibilities for a variety of approaches to the specific urban analysis of ancient Rome paralleled only by the Marble Plan. The figures have traditionally been accepted with little or no question, but Hermansen has argued that the figures must be regarded with grave doubt, for two reasons: first, because numerals are notoriously corruptible in manuscript traditions (since numeral mis-copying errors are much less apparent than spelling errors), and second, because the figures were probably inflated, he claims, out of an attitude of "Rome worship," until they have become meaningless. Hermansen points to disagreements in the figures recorded in the different manuscript traditions to support his claim of corruption, and asserts that the numbers stated for Region VIII, the Roman Forum, are simply too high to believe. Hermansen was quite right to insist on a critical approach to these figures, but closer examination shows that in spite of some minor errors, the Regionaries' statistical data, if handled with appropriate caution, can offer a great deal of otherwise completely unrecoverable specific data about the urban structure of ancient Rome.

Faithfulness of the manuscripts to the original works

The first question to settle is whether the Regionaries as preserved are adequately faithful copies of the original documents that gave rise to the *Curiosum* and the *Notitia*. By most fortunate circumstances, the Regionaries include within their own text the possibility of examining the extent of this problem. Part of the *Breviarium*, the second appendix to the Regionary Catalogues, summarizes totals for ten of the categories listed in the region-by-region statistical tables. The *Breviarium* figures can therefore serve as a check against the catalogue figures. While there were many chances for errors to occur, it is most unlikely that they would alter the two sets of figures in the same way.

A tabulation of the totals from the regionary lists compared to the *Breviarium* figures shows a very clear result: for variable figures, the two sets of numbers never agree. They only agree for the totals of *vicomagistri* and *curatores*, invariable and regular figures. All other categories present discrepancies. This is actually ideal, since it is conclusive proof that, in the manuscript tradition, the totals in the *Breviarium* were copied down separately, rather than derived mathematically from the copied catalogue figures (see Fig. 4.15). In the cases of both the *Curiosum* and the *Notitia* there are therefore two independent links to the original documents, two chances at recovering something close to the original figures. Since the two lineages of figures have each undergone unique histories of copying errors, without any copyist's thinking of reconciling the tallies and the totals, then close correspondence between the two sets would indicate that whatever corruption has taken place has not been severe. Wide discrepancy would indicate serious corruption, without identifying which body of figures was closer to correct. The degree of discrepancy between the catalog totals and the *Breviarium* figures is an index of whether we are at least in the right ballpark. Figure 4.16 shows the degrees of difference expressed as the percentage of the larger figure in each pair.

In general there is close enough agreement to affirm that the numbers are not wildly off. The cases of maximum discrepancy can be examined for simple copyist errors, and several do appear to be obvious. "Correcting" such figures is a speculative business, and it veers dangerously close to tampering with data. However, where a single character change can be shown to make substantially better sense of the document, it is a warranted emendation. Two cases require special attention:

Case 1. The regionary tallies and the *Breviarium* totals for *vici* and *aediculae* present discrepancies of 27% (*Curiosum*) and 28% (*Notitia*). The number of *vici* is equal to the number of *aediculae* in both lists, but the regionary tallies total 307/304, while the *Breviarium* records 423/424. It is certain that this error of approximately 100 has occurred in the *Breviarium* total, where it can occur as a single character, rather than there being

c.100 *vici* missing from any region or even several. Therefore it seems most likely that CCC (300) turned into CCCC (400) at some point. Considering the purpose of the Regionaries, errors, when discovered, were probably decided in favor of the more spectacular figure. The copyist, confronted with differing figures for *vici* and *aediculae*, made them both the same in favor of the higher number. This leaves 323/324 as a highly probable figure prior to this copying error. At this point the discrepancy is reduced to an acceptable 5%/6%, which is on the same low order of magnitude as most of the other discrepancies.

Case 2. The only other case of serious discrepancy can also be ameliorated by the identification of a single-character error. The *horrea* totals show a 13% discrepancy. One of the *horrea* figures in the catalogues is a strong anomaly--the highest single figure for warehouses (an increase of 37% over the next highest figure); it is also in one of the regions least able to accommodate the amount of architectural area indicated by the high figure. Forty-eight warehouses in the Palatine region (X) is so strikingly high that even without considering the *Breviarium* discrepancy the figure is highly suspicious. The Roman numeral for 48 is XLVIII. Without the L it becomes XVIII, 18, a much more reasonable figure in line with the other minimum warehouse figures. This single correction, which Jordan also supported, would bring the figures to 5% discrepancy, and seems justified.⁸¹

Granted these emendations, the *Breviarium* and regionary totals are reasonably close. There is enough discrepancy to prove that in the separate lists there are two independent links to the original figures, but enough correspondence to show that they are not badly corrupted from the originals. The errors due to the manuscript tradition are therefore not an obstacle to the use of the figures. The Regionaries as preserved can be regarded as a

⁸¹ Jordan (1874), p. 68. Rickman (1971), p. 323, supported the emendation of 48 to 18 *horrea* in Region X as well. It may be observed that both these cases of identifiable error occurred at some point common to both the *Curiosum* and the *Notitia*, when the manuscript tradition had not yet diverged.

close image of the original document. The question now becomes whether the original document contained real and accurate figures.

Reliability of the original work

This problem closely resembles the same problem faced by those who work with the data of the Marble Plan. This information regarding the non-monumental matrix of the city is interesting especially because the remains of that part of the city are destroyed or inaccessible, but this same factor means that the information cannot be checked archaeologically for accuracy. Hermansen argues that the figures for the Roman Forum region are impossibly high, but he insists too strongly on rigid definitions of building types (especially *insulae*) and on large sizes for these even in what was undoubtedly a most crowded region. Von Gerkan computed areas for all the architecture specified in the region and showed that it was not impossible to fit them in, if his lower figures for the size of *insulae* and *domus* in this region were accepted, for instance. The typological analysis presented in Chapter 3 attests to a wide variety of dwelling sizes throughout the city, and the “strip houses” identified there are just one example that fits Von Gerkan's specifications for *insula* size, while the examples of private houses show that these could take variable forms in Rome, and were not necessarily always the expansive structures familiar from Pompeii. Though the high figures for the central regions of the city are surprising, they are not impossible.⁸²

The data as presented in the Regionaries form patterns, as will be shown below. These patterns are consistent, with meaningful and explicable variation. For these patterns to be consistent throughout the various categories tallied in the statistical tables, faked inflated figures for any one category would have to have been accompanied by figures

⁸² Though the grand Imperial Fora are rarely imagined as being hemmed in by dense warrens of low-quality residential architecture, it should be recalled (as mentioned earlier) that an apartment building once collapsed right into the Forum of Trajan. This indicates insubstantial construction directly adjoining this forum, and it was exactly this sort of building that could be tightly packed enough to account for the extraordinarily high figures given for *insulae* in the central regions.

inflated by the same ratio in every other category. The impression arising from the plotting and consideration of the statistical figures is that they display subtleties of concordance that would have been beyond the conception of a compiler or copyist interested simply in magnifying the glory of the city through a few inflated figures for the city center.⁸³

Traditional use of the Regionary data

The information provided in the Regionary catalogues has, until the present study, been put to two uses. One is the identification of the boundaries of the fourteen regions as they were in the fourth century; hence, all maps of the regionary boundaries stem from study of the Regionary Catalogues. The identification of boundaries was traditionally done by plotting the known monuments from the landmark lists on a map of Rome, and then drawing lines between them according to their regionary identifications from the catalogues (Fig. 4.17). There were many possible solutions to the problem approached in this way, and it became almost expected for a good Roman topographer to demonstrate his knowledge by producing a new map of the fourteen regions. Von Gerkan tackled this issue and included for the first time a very careful consideration of the circumference figures provided at the end of each regionary statistical list. In trying to reconcile the necessary separations with these circumferences, he arrived at a new and slightly different solution to the old problem, which shifted some of the inferred boundaries from the simpler separation lines devised earlier. But the result was a scheme of the fourteen regions in which boundaries follow streets and walls, as well as closely matching the

⁸³ And would it really be worth trying to impress the audience of the Regionaries with the number of bakeries in each of the central regions? For a reader, are the 18 *horrea* listed for the Roman Forum region really more impressive than a "more believable" 11 or 15 would have been? Yet these figures would have to have been inflated along with the *insula* figures for the correspondences observed below to be preserved. Finally, as will be shown below, for several categories of the figures direct comparison is possible with comparable statistics for Pompeii, and in every instance the Regionary statistics are either comparable or only slightly higher than those for Pompeii (as would be expected in the dense settlement of Rome) attesting that no significant inflation has occurred.

circumference figures in the Regionaries.⁸⁴ Von Gerkan succeeded in accommodating all the circumference figures except one, that of the Roman Forum, but this region is so definitively circumscribed by known monuments that the discrepancy must be attributed to copyist's error. Von Gerkan never produced a large-scale map of his conclusions, and so they have not been as widely promoted as some other solutions, but his work should be regarded as the most definitive.

The other use to which the Regionary data has been put is the estimation of the population of Rome in the later Imperial period. These estimates have ranged widely between unreasonable extremes of 400,000 and four million, usually hovering around or somewhat above one million.⁸⁵ All these estimates are based squarely on the statistics provided for dwellings, *insulae* and *domus*, in the Regionary catalogues, and the controversies have all centered upon the question of how many inhabitants lived in each *insula* and *domus*.

These traditional uses of the Regionary Catalogues have only begun to make use of the possibilities contained in the data. I have already shown how the statistical lists can be used to explore a Roman image of the city. The landmark lists offer much material for considering the image of the city as well. Their inclusions and exclusions are often surprising, and the specific inventory provided presents a fascinating tour of often unexpected elements of the ancient city (including schools and a restaurant noted for its fine view of the Mausoleum of Augustus, for example). These lists could be reconsidered for the statement they make about what constituted a landmark in the city, and what character the urban fabric expressed. Here, however, I intend to exploit the statistical figures rather than the landmark lists. A crucial step in making the statistical data more useful is its conversion into density figures. Von Gerkan's careful determination of the regionary boundaries made the determination of their areas possible to a high degree of confidence. I have therefore rendered the regionary statistical lists into density figures,

⁸⁴ Von Gerkan (1949).

⁸⁵ Hermansen (1978) notes the population estimate extremes.

and from the graphs and maps of these data that resulted, the following regionary analysis is drawn. Through these figures, the macrostructure of Rome can be explored, and the relative levels of development in different parts of the city, and the issues of urban segregation and concentration can be examined, in ways not possible through the Plan or any other means. This macrostructural study complements the microstructural data of individual buildings and neighborhoods provided by the Marble Plan, and makes possible a more comprehensive urban analysis of ancient Rome.

Density statistics from the Regionaries

Methodology

While the fourteen regions included some territory outside the Aurelian wall of A.D. 271, I have applied the statistical figures exclusively to the parts of the regions lying within the Aurelian walls. The walls marked the limits of the built-up part of the city. The Trans-Tiber region (XIV) appears to be extraordinarily large because all landmarks on the west bank of the river were referred to it. The developed part of Region XIV lay within the Aurelian wall, and is comparable to the size of other regions. The developed portion of the city would have contained virtually all instances of the features tallied in the statistics, and therefore the intramural areas are the most appropriate measures to which to apply the statistics. Figure 4.18 reproduces Von Gerkan's map of Rome from which the template map of the fourteen regions used in this study was derived (Fig. 4.19).

The conversion of the regionary tally numbers into density figures transforms them from mere "factoids" indicating a basic level of magnitude to commensurable statistics. These statistics make possible meaningful comparisons between the regions. As densities, the figures can be plotted to present individual profiles of the compositions of each region that may be directly compared. This way, the urban fabric of the city may be probed for its localized or widespread characteristics. Through these it will be possible to characterize

the individual regions, and in doing so differences in the composition of various parts of the city will become clear.

For future studies, this density quantification will allow the objective comparison of Rome's urban fabric with that of other ancient and modern cities. Until such comparison with other cities is undertaken, the specific values of the density figures are less interesting than their relative values. Accordingly for the present study I have chosen to present the results as follows. For each set of figures I have divided the range of variation into five categories, "very high; high; medium; low" and "very low." This simple relative scale (applicable only to ancient Rome) will support the comparisons of densities within and between the regions. In its broad categorization, this scheme does not "push" the data too hard, drawing broad comparisons that are not threatened by minor manuscript errors in the figures.

For the plot of each category of the regionary statistics, I present a figure derived from Von Gerkan's map, showing intramural extent and boundaries of the fourteen regions. These are graytone-coded for the relative density values of the category in question. This provides an easily-read graphic presentation of the data, to foster comparison of data from one statistic or category to another. The map is accompanied by a bar graph presenting the same data, displaying both relative and absolute values. For these plots, the basic source of data is the *Curiosum*. Where the *Notitia* value is different, it is plotted as a white bar on the graph, accompanying the black bars that display the *Curiosum* values. In nearly all cases it will be seen that the different values in the two versions of the Regionaries do not, in the end, substantially alter the plot, as the conflicting values are usually close enough that both fall into the same relative category anyway.

Density of Vici/Aediculae

The plot of the density of *vici* and *aediculae* (the two are identical) throughout the fourteen regions (Figure 4.20) is striking in comparison with the density of *aediculae*

found in Pompeii. In the excavated portion of Pompeii 26 neighborhood shrines have been identified, which gives an average density of 0.56 *aediculae* per hectare.⁸⁶ This exceeds the figures for all but three of the regions in Rome. The high densities of *aediculae* in the Roman Forum (VIII) and Palatine (X) regions has been doubted as unrealistic, yet the higher of these figures, that of Region VIII, is only a 20% increase over the density found at Pompeii, surely not unreasonable considering the density of population and development in the heart of Rome. An average figure of *aediculae* for all of Rome would be misleading, since no individual region has a “medium” density of *aediculae*; rather, the values tend toward the ends of the scale, and it would be more appropriate to say that Regions VIII, X, XI, and XIV have an average *aedicula* density of 0.67 per hectare, and all the other regions together have an average of only 0.15 *aediculae* per hectare. The comparison shows a marked difference between the urban fabric of Rome and Pompeii in this respect, and at the same time shows that there was no reason to doubt the figures for *vici* and *aediculae* given in the Regionary Catalogues, which certainly do not show signs of being inflated out of “Rome worhsip.”⁸⁷

Density of Insulae

The plot of *insula* densities (Figure 4.23) shows that the greatest concentrations of apartment buildings occurred in the city center, in Region VIII Roman Forum, Region X Palatine, and especially in Region XI Circus Maximus. These high densities are particularly surprising, because in each of these regions there were substantial areas given over to open space or public buildings, not available for *insulae*. The Roman Forum region of course contained great numbers of monuments and temples around the Roman Forum itself, as well as the open space of the several Imperial Fora, along with the shrine and temple-covered Capitoline Hill. The Palatine Hill was occupied largely by the

⁸⁶ Laurence (1994), Map 3.1, identifies the street shrines in the excavated 44 hectares of Pompeii. Excavated area is according to Laurence (1994), p. 3.

⁸⁷ As Hermansen (1978) had suggested.

Imperial Palace, comprising several large wings, added to by successive dynasties until the complex sprawled over much of the hill's surface. Region XI was named for the gigantic Circus Maximus, which took up a considerable area. Nevertheless, in spite of the reduced space therefore available for non-monumental matrix such as dwellings, these areas record the highest densities of *insulae* in Rome.⁸⁸

One of the implications of this level of density is that the monuments preserved today were absolutely surrounded by dwellings in antiquity. The "monumental center" of Rome was thickly hemmed in, apparently in every available corner, by apartment buildings. Fragment 29 of the Plan shows *insulae* with double rows of *tabernae* directly bordering part of the Forum of Trajan (Figure 4.21), and it must have been a particularly tall and precariously thin *insula* that collapsed into this Forum in the fourth century. Even in the age of Augustus, residential settlement was thick in this area. Augustus' forum is asymmetrical in design because he was not able to buy all of the land he had desired from its present owners, who were no doubt reluctant to sell the source of very profitable rents in the city center.⁸⁹ The monumental center of Rome is often discussed for the design and relationships of its monuments, but the extremely dense residential matrix into which it was set is rarely given sufficient consideration.

The Forum of Trajan was extravagantly praised in antiquity for the great impression it made on visitors, and while the porticoes and Basilica Ulpia were indeed of grand proportions, it would seem that the simple rectangular design would not have been especially inspiring (Fig. 4.22). However, the density figures from the Regionary Catalogues reconstitute in the mind the lost masses of *insulae* filling every available space in the central zones of the city, indeed towering over the very Forum of Trajan as the

⁸⁸ The absolute values of these densities should therefore be recomputed for the available space in these regions to arrive at a value reflective of reality for purposes of comparison to other cities or analysis of real density. The value of the relative density figures for comparison within Rome remains, since all regions of the city contained various monuments and gardens which are estimated to have occupied altogether about half the area within the city. Von Gerkan (1949) offers a breakdown of space occupied by known monuments, although Hermansen (1978) takes exception to some of his figures.

⁸⁹ Suetonius *Augustus* 56.2.

anecdote about the collapsing building attests. In this overcrowded, overwhelming cacophony of *insulae*, the clean sweep of the vast open space of Trajan's Forum would have made a far stronger impression than the design would have if out of context. In reaching this forum a visitor would always have passed through the dense residential areas, and would always have been conscious of the extraordinary contrast presented by the grand plaza. It was in fact this aspect of the Forum, rather than some feature like the basilica's ornate appointments, that struck the companion of Constantius when that emperor visited Rome for the first time in A.D. 356. Constantius entered the Forum of Trajan, and, awestruck at it all, vowed that he would copy the equestrian statue that stood in its center. "First, sire," replied prince Ormisda of Persia, "build a similar stable for your steed, if you can, so that it can range as freely as the one which we see here."⁹⁰ This comment, and other reactions to the Imperial Fora in antiquity are better understood in light of the *insula* density information from the Regionary Catalogues. The extraordinary concentration of dwellings in the city center should be taken into account in any assessment of this part of Rome.

Density of Domus

The plot of *domus* density (Fig. 4.24) is striking for its extremely close resemblance to the plot of *insula* density. In fact, the two residential density plots establish a pattern against which all the other density plots will be compared. In them is seen the distribution and density of the basic non-monumental urban structure of ancient Rome, and it is with this residential structure that the other non-monumental structures will be seen to be strongly associated.

There are slight differences between the relative density plots of *domus* and *insulae*. The ratio of *domus* to *insulae* is slightly higher than average in Region I Porta Capena, and in Region V Esquiline Hill, and in Region VIII Roman Forum. It has been suggested that

⁹⁰ Ammianus Marcellinus 16.10.15-16.

these were slightly more exclusive residential neighborhoods, especially where there were hills, with a correspondingly higher occurrence of private homes.⁹¹

While this may have been true to some extent, the more telling message to be read in the residential density plots is that where *insulae* were, so were *domus*, and usually in roughly similar proportions to each other. This shows that, at the regionary scale, there was no significant economic segregation of dwellings; the rich lived alongside the poor. Twentieth-century Rome and other Italian cities have long been observed to demonstrate this lack of segregation, and it has been inferred for ancient Rome on the basis of cultural continuity and other grounds. The data from the Regionary Catalogues reinforce this impression and gives it a foundation in direct evidence. The Marble Plan demonstrates the same point at a microstructural level, as in fr. 11, where a private house is in close proximity to apartment dwellings (Fig. 4.33).

The two plots of dwelling density together show that the center of Rome was a focus of activity in which a large percentage of the population lived, rather than a monumental district devoid of habitation like the centers of many modern cities.

Density of Horrea

Rickman was the first to use the figures from the Regionary statistics to study the distribution of *horrea* in Rome.⁹² However, his use of the tallies as if they were density figures invalidates some of the comparisons he tries to make between the regions, since the regions are not of equal size. Building on the work Rickman began, a similar approach is taken here but with the data appropriately converted. The plot of *horrea* densities (Figure 4.26) does not show the expected intensity of warehouses in the Trans-Tiber and Aventine Regions (XIV and XIII), where the Marble Plan attests to a particular

⁹¹ Stambaugh (1988), p. 338 n. 7. Though he does not develop the point, Stambaugh computed the ratios of *insulae* to *domus* in every region, which was one inspiration to the present study.

⁹² Rickman (1971), pp 323-325. Even this exploratory consideration led to useful conclusions, and Richardson's statement (1992, p. 191) that the *horrea* figures in the Regionaries are "not informative" is too dismissive.

concentration of large warehouses (frs. 23, 24, 25, 28, 33, and 34; see Fig. 4.25). While the Aventine does in fact have the highest number of warehouses of any region (35), its area reduces the density figure to an unremarkable medium level. The Marble Plan clarifies the reasons behind this unexpected distribution plot. The tally of warehouses counts them as units, regardless of their size. Regions XIV and XIII have especially large warehouses concentrated near the river, so the percentage area of these regions covered by warehouses is relatively high. But as units, size becomes invisible, and 22 small warehouses in Region V work out to the same density plot as 35 large warehouses in Region XIII. Most of the warehouses attested by the Regionaries in areas away from the unloading districts should be imagined as small complexes serving individual private renters.⁹³ On the Marble Plan it is indeed mainly small warehouses that appear in areas away from the wharf district. It is particularly important in this instance to consider the evidence of the Marble Plan, because the Regionary figures alone do not indicate the large warehouse districts known from the Plan and from literature to have existed on the lower shores of the Tiber.

At the same time, these figures from the Regionaries provide an important complement to the Plan data. From literature and the Plan we might have supposed that the Aventine Region concentrated the warehouses of the city, leaving relatively few elsewhere. The density plot from the Regionary Catalogues data attests that warehouses were found all over the city (Figure 4.26).⁹⁴ The number graph shows that there were at least 16 in every region. The density plot shows that warehouses were generally found wherever habitation was more dense. The *horrea* density plot closely resembles that of the *domus*, with the exception that while Region I Porta Capena has a medium density of *insulae* and a high density of *domus*, it has a low density of *horrea*. Conversely, Region XII Public Pool is low in both kinds of residence but has a high density of *horrea*. Apart from the distinctions in these two regions, it appears that warehouses form part of the non-

⁹³ Rickman (1971), p. 324.

⁹⁴ Rickman (1971), p. 325, drew this conclusion from the Regionary figures.

monumental matrix of Rome. *Horrea* are not so much a concentrated commercial element as might have been imagined, although concentration did occur for large warehouses.

Density of Balnea

The plot for *balnea* (Fig. 4.27) shows that they are found throughout the city, and this is what would be expected from the appearance of small baths in so many locations on the Marble Plan. Only one region, IX Campus Martius, rates as relatively low in density of *balnea*. In general the density of small baths follows the density of residential matrix as indicated in the *domus* and *insula* plots, but there are some significant differences. First, Region XI Circus Maximus is densely packed with private and apartment houses, as we have seen, both rating very high relative densities. This region is low in *balnea*, however, the only region in which there is such a marked contrast in density of residence and of small baths. The only other marked variance from the residential density pattern is in Region I Porta Capena. With a medium density of *insulae* and a high density of *domus*, this region is one of the two with very high relative densities of small baths. The core of the city, Region VIII Roman Forum, is as densely filled with small baths as it is with nearly everything; the Palatine and Templum Pacis regions (X and IV) in and near the city center, are also predictably high in bath density. Region VII Via Lata is high also, relatively even more so than it is in dwellings, as is Region I Porta Capena. This suggests that while baths were essential all over the city, and more were required for the heavy population in the city center, people entering the city may have desired bathing facilities soon after passing the gates. This would explain the particularly high densities in regions VII and I, which lie along the main transport corridors leading into the city, the Via Lata to the north, and the Viae Appia and Latina entering from the southeast in Region I.

In sum, baths occur all over the city, comparatively rare only in the Campus Martius. They generally follow the density of residential structure, except for a low density in the

crowded Circus Maximus region, and were also more dense along routes into the city, presumably for the benefit of arriving travelers wishing to refresh themselves.

The plot of small baths in Rome prompts some further thoughts on the subject of *balnea*. The great Imperial *thermae* are certainly important, but they are only part of the picture of Roman bathing, and a smaller part than the spectacular ruins of *thermae* still standing in Rome would suggest. The Plan and the Regionaries help to address this imbalance in awareness, and allow us to consider the role of minor baths in the ancient city.

The Imperial baths were huge and luxurious complexes, offering spectacular amenities the like of which the world has never seen again. How could the city market sustain humble minor baths when such competition for patrons existed? One might expect that the Imperial baths would replace the old smaller private baths, increasingly as more large *thermae* were built over time. The first public complex was that built by Agrippa, the *Thermae Agrippae*. These set the foundation for the long tradition of Imperial public baths that was to follow, and which indeed was to become one of the most characteristic traits of Roman urbanism, within Rome and throughout the Empire. Beginning with Nero, a succession of emperors built public bath complexes in Rome throughout the first four centuries A.D. Typically, the newest complex was even larger and more splendid than the last. The baths of Diocletian, built at the beginning of the fourth century, covered over 30 acres (13 hectares), or an area roughly equal to that of the original settlement of the Roman city of Timgad in Algeria.⁹⁵ By the time of the Regionary Catalogues there were eleven Imperial bath complexes. The amenities of these were extraordinarily luxurious. Recent work on Roman baths has explored their vast artistic collections and the subtleties of their design.⁹⁶ They were constructed on a titanic scale, filled with superb art, made of

⁹⁵ Carcopino (1968), p. 255, cites the areas of the two largest imperial *thermae*. MacDonald (1982), p. 25 cites the size of the original settlement of Timgad in comparison at just over 30 acres, or 12.5 hectares.

⁹⁶ DeLaine (1988) reviews and summarizes research on Roman baths. Marvin (1983) is one recent study of the artistic programs of the great *thermae*.

precious materials, and offered not only hot, cold, and warm water, but also exercise areas, libraries, lecture halls, and an almost endless variety of physical and mental pursuits, leisures, invigorations, relaxations, and diversions.⁹⁷ These facilities allowed the meanest Roman citizen to live like an emperor, for the environment they provided was unsurpassed, and admission to them was free.⁹⁸

What becomes very striking, considering the evidence from the Marble Plan and the Regionaries, is that in the fourth century these Imperial baths, for all their luxury and amenities, and their free admission, had not eroded the role of neighborhood baths at all. The Plan and the Regionaries attest a perhaps surprising reality, and show that the minor baths held an important place in Rome's urban fabric that was all their own. In fact, though by the time of the Regionaries eleven great *thermae* stood in the city, neighborhood *balnea* were more common than ever. The number had grown consistently over time. In 33 B.C. Agrippa ordered a census of baths within the city, and recorded the number 170.⁹⁹ In Pliny's day the number was "uncountable."¹⁰⁰ As Staccioli observed from his review of the minor baths on the Plan, one striking aspect about them is that they seemed to have been tucked in everywhere in the city, in and amongst warehouses, in thickly populated areas, and wedged into odd corners.¹⁰¹ The Regionaries support the impression gained from the small fragments of the Plan, and attest that small baths were indeed distributed everywhere in Rome. Only one region is listed with as few as 15 (Region XI Circus Maximus); the next lowest number is 44 and nine regions are listed with at least 75. The Regionaries then record a total of 856 private baths. These baths were not expensive, but they did charge admission.¹⁰² The *balnea* clearly served a purpose that was different from that of the grand Imperial *thermae*. As discussed above,

⁹⁷ Nielsen (1990), pp. 144-146, catalogues the variety of activities associated with the baths.

⁹⁸ Cassius Dio 59.43, Pliny *NH* 36.121, Fronto *Ep. Gr.* 5.

⁹⁹ Pliny, *NH* 36.121

¹⁰⁰ Pliny, *NH* 36.121.

¹⁰¹ Staccioli (1961).

¹⁰² Carcopino (1968), p. 254, n. 41, collects a number of ancient sources mentioning the price of admission to private baths, which was always a very small amount. Children were customarily admitted free.

the *balnea* were regarded as a basic aspect of the city's identity and structure, and this was doubtless due to the social interactions that they fostered, probably among relatively small bodies of clientele. The familiarity of one's customary local bath along with the sight of well-known fellow bathers there must have provided an important sense of community and identity, beyond the family but still intimately small.¹⁰³ *Balnea* were probably sources of significant social comfort for the inhabitants of the largest city in the ancient world.

Density of Lacus

The Marble Plan illustrates street fountains (Fig. 4.14), and in size and placement they appear to be generally comparable to those familiar from Pompeii. Their placement in the middle of the street is surprising, given that this would obstruct traffic flow, but the same kinds of placement are seen at Pompeii, showing that in this respect the urban fabric of the two cities was similar.¹⁰⁴ The distribution of street fountains throughout the city (Fig. 4.28) again follows the now-familiar residential density pattern to some degree, but with some interesting distinctions. Region IX Campus Martius has been shown to rate as "very low" density for all other architectural categories, but it is only "low" in *lacus*. This may find an explanation in the monumental character of the Region, which excludes the structure of the other categories measured here. While residences and the other non-monumental structure elements serving them like baths and bakeries were built by private citizens, most of the structure in the Campus Martius was built as public architecture. Fountains were also typically provided as public infrastructure, since they tapped into public water supply and the aqueducts. Region IX may have been relatively over-

¹⁰³ Nielsen (1990), p. 146, concluded from her study that "much of the life of the town went on in the baths, whose social importance can hardly be overestimated."

¹⁰⁴ Laurence (1994), pp. 46-7 observes that while street junctions were the preferred sites for fountains in Pompeii, "in the narrower streets, they were placed in a manner that at least impeded movement through the streets," and in some places even blocked circulation. He speculates that such apparently poor placement might arise from the necessity of locating the fountains, a later addition to the urban fabric, on public property.

provided with *lacus* simply because *lacus* come under the heading of public architecture and this was a region of public rather than private structure.

A surprising variance from the residential density patterns is the low density of fountains in Region XI Circus Maximus, which as we have seen was densely inhabited. It is most striking in this connection that Region XI was also notable for its particularly low density of baths, compared to the residential density. Baths and fountains both require water. The curious variance from the residential pattern in both baths and fountains may have arisen from a comparatively poor water supply in this region. The Roman Forum and the Palatine were heavily supplied with fountains and baths, and it may have been that these destinations used up most of the available water coming in from the aqueducts, since by the time the water reached the city center, it had already been tapped by the outlying regions for their needs. After the extremely important Forum and Palatine regions there apparently was comparatively little water left for the Circus Maximus region, though the region was still provided with a low but adequate density of water sources and baths for its residents.

Region XII Public Pool is supplied with a higher relative density of fountains that its residential density would seem to warrant, but the Antonine Baths, as well as the *Piscina Publica* for which the region was named, both lie in this region, and were obviously supplied with substantial quantities of water. In A.D. 212-213 the emperor Caracalla added an extension to the Aqua Marcia aqueduct to serve his Antonine Baths.¹⁰⁵ This extension became known as the Aqua Antoniniana, and was no doubt also used to provide water to public fountains in the comparatively water-rich Region XII.

Region XIV Trans-Tiber is also better supplied with fountains than its low (*domus*) and medium (*insulae*) density of residential structures might suggest, but this region had two aqueducts all to itself: the Aqua Alsietina and the Aqua Traiana. Augustus built the Aqua Alsietina in 2 B.C. mainly to supply his huge arena for naval combat games, the

¹⁰⁵ *CIL* 6.1245=*ILS* 98

Naumachia Augusti.¹⁰⁶ While this colossal artificial lake had long gone out of use by the time of Alexander Severus in the early third century, the aqueduct remained and was no doubt put to good use supplying public fountains, accounting substantially for the relatively high density of *lacus* in this region.¹⁰⁷

Frontinus, a water commissioner in Rome in the late first century A.D., presents an image of Rome as very well-supplied with water through its aqueducts, but there has been no way to investigate the degree to which the city's water supply infrastructure compared with that of other contemporary Roman cities in its provision of street fountains. The Regionary statistics allow Rome to be specifically assessed in this regard (see Fig. 4. 30). *Lacus* density ranged from a low figure of about 0.4 fountains per hectare (in the less populated Regions III and VI, Isis and Serapis and Alta Semita) to a high figure of about 2.5 per hectare (in the Roman Forum and Palatine regions), with an average of 1.1 per hectare for the entire city.¹⁰⁸ This may be compared to the average of 0.86 fountains per hectare in Pompeii.¹⁰⁹ In its less-populated regions, then, Rome had *only half* the average number of street fountains per hectare possessed by Pompeii. In zones of higher population *lacus* were slightly more common than in Pompeii, and the most heavily populated areas had densities of almost three times Pompeii's average. This comparison shows that Rome, with its 19 aqueducts and large population, was better supplied than Pompeii on average, as would be expected. But it is interesting to observe that several regions are significantly 'drier' than Pompeii in this regard, and the general magnitude of the Regionary figures becomes very believable in light of this comparison. This is further evidence that the Regionary figures were based on reality, are not badly corrupted, and are not inflated.

¹⁰⁶ On the aqueduct: Frontinus *Aq.* 2.85. On the naumachia: Velleius Paterculus 2.100.1; Augustus *RG* 23; Suetonius, *Aug.* 43.1; Cassius Dio 66.25.3; Hieron *Ab. Abr.* 2013.

¹⁰⁷ Cassius Dio 55.10.7 describes the naumachia as ruined in his day.

¹⁰⁸ The relatively low population in the Campus Martius (Region IX) was served by fountains with a density of 0.5 per hectare.

¹⁰⁹ Laurence (1994), Map 3.2, shows 38 fountains in Pompeii. He gives 44 ha as the excavated area of the city (p. 3), hence my average density figure for the city.

Density of Pistrina

Bakeries in Rome were very closely associated with the residential matrix of the city.¹¹⁰ The density plot of *pistrina* (Fig. 4.29) follows the density plots of *domus* and *insulae* almost exactly, with little or no relative variance in most regions. The only differences are the relatively heavier densities of bakeries in the Palatine and Public Pool regions (X and XII). In the Palatine region this is only a single category difference, but in the Public Pool region it is markedly more dense (two categories) than either type of residential structure. This is the only case in the Regionary statistics of commercial concentration not related directly to residential intensity. At 25 bakeries this region has only ten more than the several regions with the fewest (15), but the number and density both suggest that Region XII was to some degree a “bakery district” in proportion to the amount of other structure it contained. The extremely close correspondence with the residential plots, however, is the more significant point here, and it should be inferred that nearly everyone used bakery services in the immediate neighborhood of their residences.

From the simple entry title in the Regionary statistics lists, it is not possible to discern whether *pistrina* is used to mean a bakery where grain was ground (and could also be baked and sold), or bakeries without mills which acted only as retail points for bread. A comparison with bakery density measured at Pompeii provides evidence for the latter identification. The density figures for *pistrina* at Rome vary from 0.54 per hectare to 0.08 per hectare, with a city-wide average of 0.26 per hectare. Pompeii’s average for all bakeries is 0.70 per hectare, almost three times the ratio found in Rome. A further breakdown of the figures for Pompeii shows that “retail-only” bakeries, without mills, average 0.23 per hectare. The close correlation with the 0.26 figure for Rome strongly suggests that the *pistrina* category in the Regionary statistics indicates bakeries without mills. The category is included, like *lacus*, based on the direct experience of the citizen

¹¹⁰ On bakeries in a Roman city (Pompeii), see Mayeske (1979); for bakeries and related issues in Rome, Stambaugh (1988).

with the points where basic sustenance is actually obtained. The comparison further suggests once more that the Regionary figures are not badly corrupted and, in this case at least, certainly not inflated.

Conclusions from density plots

A significant conclusion derived from this study of density plots is that Rome's non-monumental residential and commercial matrix was, on the whole, markedly homogeneous. The density plots do not reveal economic residential segregation, residential/commercial segregation, nor significant regional concentrations of commerce as represented by warehouses and bakeries.¹¹¹ These plots, it must be remembered, operate at a low resolution, and many small-scale concentrations are hardly precluded by these findings. But rather than varying greatly in nature from one part of the city to another, the residential and commercial matrix everywhere featured the same combination of rich and poor dwellings together, and was served by warehouses, bakeries and the ubiquitous local baths. The generally consistent character of Marble Plan appears to support this impression. The most significant way that this matrix varied was in intensity, in *overall* density rather than in the *relative* densities of its component elements. The generally homogeneous constitution of Rome's matrix is an objective feature of its urban structure. At present, what must be explained, however, is the variation in overall density of the residential and commercial urban structure.

The constellation and overall alignment of the non-monumental structural density plots suggests that the overall residential/commercial matrix distribution and intensity of ancient Rome can be explained by five principal factors. The aspects to be explained are the consistently high and very high densities in regions VIII, X, and XI; the greater density

¹¹¹ MacDonald (1982), p. 132-3 reached a similar conclusion based on his visits to many Roman city sites, describing the way in which public buildings are mixed in with residential and commercial buildings, and the whole *mélange* distributed across a city site without significant typological segregations.

also seen in I, II, IV, and VII; and the very low density in IX, low to very low in III and VI, moderate in XII and moderate to low in XIII.

The first factor is a simple one. Regions VII, X, and XI form the core of Rome, and densities here are the highest. A tendency towards lower densities with increasing distance away from this core follows a roughly concentric pattern of population density peaking in the center and trailing off towards the periphery. This was a simple, typical pattern of many cities large and small throughout the world prior to the full effects of automobile transportation, and is seen in the stereotypical high-rise “downtowns” of older American cities, for instance. Rome's most prominent religious and political monuments, foci of active aspects of city life for centuries, were in these central regions, as well as the basilicas and law courts, where much business and legal activity was centered. The Imperial palace, home of the emperor, and the Circus Maximus were additional foci in these regions, as well as the important markets of the Forum Holitorium. The concentration of residential and commercial structure in these same regions simply follows the sites of the city's most vibrant activities, and the basic “bull’s-eye” central population density pattern, fading with distance from the center, is the default against which the four other factors act. Other regions best understood as part of this pattern include Region IV *Templum Pacis*, which is dense but one rank away from the core it is usually one category less dense in residential/commercial matrix structure, and Regions V *Esquiline* and XII *Public Pool*, which are less dense as they are farther away from the core. Region XIV *Trans-Tiber*, linked to the core area by bridges, is part of this basic pattern as well, with its moderate sub-central densities.

The second significant factor explaining the density distribution of Rome's non-monumental residential and commercial matrix can be explained by relating the matrix not to monuments, but instead to another vital aspect of the city's structure, its primary transport corridors (Fig. 4.30). The *Via Lata* connected Rome's core directly to the *Porta Flaminia* and thence to points north. The *Via Lata*'s prominence in the Roman image of

their city may be recognized in the fact that Region VII was named for this road. Region VII is a dense extension of the core, usually as dense as Region IV which is closer to the center. The extension of density in Region VII is to be explained by the importance of the Via Lata transport corridor. It is very common for residential and commercial structure to be more intense in proximity to activity, whether this is point-localized activity like the factors discussed regarding the core zone, or whether the activity is movement along a major transportation artery. The extension of density through Region I Porta Capena is explained in the same way as Region VII Via Lata. Here the artery is the Via Appia, which pierces the Aurelian Wall at the Porta Capena, which is, again, a transport feature for which the region, like Region VII Via Lata, is named.

The third factor shaping Rome's residential/commercial matrix density patterns is the special character of the Campus Martius, Region IX. In the Republican period, this "Field of Mars" was mostly an open area used for marshaling and drilling armies, as well as for the mass activity of voting. By the Late Republican period, the open space began to be filled with large public buildings that could not be fit in the crowded core, beginning with Pompey's huge portico and theater, for example. In the age of Augustus, other theater complexes followed, as well as the Baths of Agrippa (which included a decorative formal lake and park) and a huge monumentalization of the old voting structure, which became the twin porticoes of the Saepta. Porticoes, temples, a stadium, more baths, Augustus' mausoleum, and a giant sundial plaza also filled this region, most of them on orthogonal alignment, until the area was a real monumental zone. The Marble Plan presents the images of many of these buildings (as discussed in Chapter 1), confirming their extent. The Campus Martius, with its remarkable collection of architectural regularity and grandeur, presented a grand aspect closest in all the city to the popular modern image of ancient Rome uncluttered by slummy tenements, characterized by marble classical monuments in every direction.¹¹² The very large amount of space occupied by monuments

¹¹² In fact, Strabo (5.3.8 [236]) provides an excellent description of the Campus Martius in his day, in which it is presented as the showplace of the city.

in this region left relatively little room for residential and commercial structures, which did not have a long history in the area anyway. The result was that even in the fourth century A.D. this region, though filled with monumental structure, contained relatively little in the way of dwellings and minor commercial buildings.

The paucity of residential and commercial structure in Regions VI Alta Semita and III Isis and Serapis is explained by the “bull’s-eye” population distribution pattern in conjunction with a fourth major factor, garden estates and large bath complexes. Region VI contained the Gardens of Sallust, a huge estate originally established in the first century B.C. by the Roman historian for which it is named. This was “the most famous estate of its kind in Rome,” and was unrivaled for its extent and luxurious appointments, including pavilions, much artwork, stables, an obelisk, and, by the third century when the estate had long since become imperial property, a portico a mile long.¹¹³ This estate occupied a vast area of Region VI, and the low density figures for this region's residential and commercial matrix should be read with the understanding that the figures are an average between the extremely low densities within the estate, and the higher densities that existed outside it. Further contributing to the low density figures in Region VI is the gigantic bath complex of Diocletian, dedicated in A.D. 305-6, which occupied 13 ha by itself.¹¹⁴

In Region III were many garden estates as well, including the sizable gardens of Maecenas, of Lamianus and Maianus, and of Torquatianus.¹¹⁵ The small Baths of Titus and the very large Baths of Trajan also occupy space in this region.

¹¹³ Richardson (1992), p. 202-3.

¹¹⁴ Dedication inscription (known from four copies): *CIL* 6.1130=*ILS* 646. Area measurement from Carcopino (1968), p. 255.

¹¹⁵ The Gardens of Maecenas included Rome's first heated swimming pool (Cassius Dio 55.7.6). After the death of Maecenas, his gardens became imperial property (Suetonius, *Tib.* 15.1), and Nero's *Domus Transitoria* was later built specifically to connect these luxurious gardens to the palace on the Palatine (Suetonius, *Nero* 38.2). The Gardens of Lamianus and those of Maianus were established at the beginning of the first century A.D., and passed into imperial control under Tiberius (*CIL* 6.8668 and Suetonius, *Calig.* 59). These gardens, difficult to distinguish topographically today, were the source of much recovered artwork from the ancient city, including the famous bust of Commodus with the attributes of Hercules. On these gardens see Cima and La Rocca (1986). The gardens of Torquatianus are known only from a single reference in Frontinus (*Aq.* 1.5), and are to be placed among other gardens of uncertain name in the same general area (Richardson 1992, p. 204). These were fashionable and very richly appointed gardens, and those named here are only some of those in Region III. Gardens occupied a significant amount of territory in this region.

Thus, in these two regions VI and III, gardens and baths occupy vast tracts not available for the residential/commercial matrix, and the low density figures, comparable to those in the Campus Martius, are the result.

Finally, a fifth factor probably accounting for the slightly lower density of habitation in Region XIII Aventine than might be expected from its proximity to the center of the city is the region's commercial character. As has been mentioned, the largest warehouses in the Roman world were located here in this wharf districts. Liquid shipping cargo, such as wine and oil, that was received into these warehouses often came contained in amphorae, and the broken pieces of amphorae cast away in this area now constitute a small mountain known as Monte Testaccio, which occupied a considerable area itself. The warehouses, dock facilities, and Monte Testaccio took up enough room in this region to have a slight effect on the density of residential and commercial matrix.

By these five factors the density distributions plotted from the Regionary Catalogue figures may be understood. The Regionary Catalogues thus provide much insight into the macrostructure of the city, an excellent complement to the microstructure revealed by the Marble Plan.

Conclusions

A single example from the Marble Plan, fragment 11 (Fig. 4.31) provides a sample of the city that illustrates many of the points made during this study. Three atrium houses of traditional plan lie side-by-side, attesting that this ancient form was still a part of Rome in the early third century. Right beside these upper-class *domus* to the left is an *insula*, the juxtaposition being a manifestation of Rome's general lack of economic segregation in dwellings. This *insula* is equipped with street-front arcades attesting that the streetfront *tabernae* were of a commercial nature. *Tabernae* facing in on an inner court were the residential component of the same *insula*, attesting that the intermixing of residence and commerce occurred at a microstructural level as well as at the macrostructural level

demonstrated by the regionary analysis. Emphasizing the same point even more strongly is the workshop neighboring the *domus* on the right side. The basins in this shop may indicate that it is a fullery (a wool worker's or cleaner's shop), and the workshop is fairly large, representing a level of industry above the *tabernae*. Bordering the workshop on the right is a second *insula*, with *tabernae* backing onto a rear court. This is a configuration particularly characteristic of Rome, distinctive of the capital but not of Pompeii, Herculaneum, or Ostia, as the Plan has shown. The staircase indicates the presence of upper residential floors (as did a stair in the previous *insula*). The *tabernae* in this *insula* are also fronted by an arcade, and emphasizing the commercial nature of these shops is the comparatively rare amenity of a sidewalk setting the arcade back from the street. A monumental staircase climbing an incline divides this *insula* from the next to the right, which has *tabernae* with back rooms around a central court. The court shared by many residents with small living spaces appears as a characteristic of Rome even in this small sample of the urban fabric. The staircase leads to a monumental garden behind the workshop and the second *insula*. To the right of this is a structure that appears to be a corridor *horrea*, with what looks like a very similar structure just beyond it. Across the street at the bottom of the fragment appear the standard street-front *tabernae*, the equally standard rear courts, and between them an *insula* which features a street-front separate stair to upper floors, and shops on either side of a passage leading to an inner hall; this is a large form of the 'strip house' *insula*.

This piece of fragment 11 is a reprise of many of the elements that have been studied individually throughout this dissertation. The symbols, such as the sidewalk, no longer mislead; rather than posing a conundrum the apparent separation of the *taberna* units from their courts is now understood as the simplification of residential doorways. The detail of each structure and the effort and diligence of the survey that produced it are now reconciled with the elements of carelessness seen in the engraving. The structure of the city presented in this fragment displays the microstructural reflection of the conclusions

reached from the regionary studies: that Rome's non-monumental architecture was thoroughly intermixed, with the urban fabric of the city being fundamentally of the same composition all over the city.

This study has reassessed the Marble Plan as an artifact, as a Roman map, and as a window into Rome's urban structure. It is now clear that the Plan was derivative of, rather than representative of, the standardized Roman survey tradition represented by the other Roman stone plans. In the course of the investigation of the other Roman architectural plans, the field survey tradition (that of the *agrimensores*) has stood out in contrast, with its focus on boundaries as opposed to the purely architectural concern of the architectural recording tradition (that of the *mensores aedificiorum*).

With an understanding of the Plan's symbolic purpose, its level of accuracy was naturally suspect, especially in view of its demonstrated weaknesses in several prominent monuments. However, the analysis of the Plan's errors, and the comparison of Plan representations to archaeological remains has demonstrated that while the Plan simplified much from its original documents, its basic level of accuracy is sufficiently sound for urban analysis, if the data are used with appropriate caution. The Renaissance drawings have been established as a dependable, if not perfect, resource for many important lost Plan fragments.

The Plan's non-monumental architecture, categorized and examined closely, reveals an urban vocabulary similar to other familiar Roman cities but distinctively different in some respects, notably the patterns of rental housing. The Plan's non-monumental architecture has been shown to respond well to typological analysis, and a great deal of the city's urban structure can be understood from the record provided by the Plan.

Finally, the Regionary Catalogues have been brought into the urban analysis of Rome. Defended as reliable enough for certain productive analyses, the data from the Catalogues have reinforced many of the impressions arising from the study of the Plan regarding the

nature of Rome's urban form. Further, the Regionaries provide insight into the city's macrostructural form that complements the microstructural data offered by the Plan.

The Marble Plan holds significant potential for future studies. Building on the foundation established here, the larger sections of the Plan should be scrutinized building by building to assemble a comprehensive picture of the neighborhoods depicted. It would be an interesting exercise to attempt to “translate” portions of Ostia and Pompeii into the Marble Plan's conventions. Doing so would re-create some of the same challenges faced by the Roman architectural recorders and the Plan's engravers, and this might assist in explaining some of the structures that remain hard to interpret on the Plan.

The Regionary data could also be applied to the Plan as a predictive search tool. For example, the Regionaries list 856 baths in the city. The Plan is about a 10% sample of Rome, from a century and a half earlier (considering the trend of increasing numbers of *balnea* over time, the presumed total figure of baths in Rome ca. A.D. 208 should be adjusted for the time difference). How many baths should therefore appear on the Plan? The 20 or so presently identified are far fewer than the predicted number would suggest, and therefore many baths remain unidentified on the Plan. This may mean that alternative forms should be looked for, and comparative examples from other Roman cities studied carefully for types that may be hiding in the Plan. It may be that the truly typical *balnea* of Rome were even smaller than most of the types identified in this study. Such an approach to the Plan, taking off from the evidence of the Regionaries, could be applied in several categories, including *domus*, *insula*, and *horrea*, and it would be interesting to see what conclusions arise in each case. To find predicted correspondence would confirm that the type under study was defined in the way that the Romans would have defined it, which is an important consideration (finding far fewer than the predicted number of *domus*, for example, might prompt a reconsideration of what this term may have meant in Rome, possibly broadening it beyond types traditionally called *domus* elsewhere).

The Regionary Catalogues' density statistics for the city of Rome offer intriguing possibilities for comparison with other cities, both ancient and modern. Imperial Rome had a generally homogeneous urban fabric. Was this a characteristic of other Roman cities as well? In what ways was the urban form of Rome similar to that of other Roman cities, and in what ways was it distinctive? How do the density figures for Imperial Rome compare to those of cities from other cultures and time periods, and what would these comparisons illuminate about the urban experience and cultural identity in each of the studied cities?

In Rome itself, the possibility also exists for characterizing the individual regions on the basis of the Regionary figures together with evidence from the Plan. Figure 4.32 demonstrates that distinctive profiles can be drawn on the basis of the Regionary data for each of the regions, in spite of the general homogeneity of the urban matrix. While I have stressed the commingling of rich and poor housing, there were certain traditions of regional economic identification--the patrician Palatine, for example, and the plebeian Aventine. How real, architecturally, were these differentiations, and in Severan Rome did any of them still mean anything? The fourth-century Aventine, according to the regionary figures, has the third highest ratio of *domus* to *insulae* found in the city.¹¹⁶ Does this mean that the character of the region has changed over time, or that such distinctions were no longer significant?

Finally, the landmark lists of the Regionaries warrant a thorough consideration, as a record of elements of the city considered to be landmarks. An exploration of the landmark lists would be an interesting topographical exercise, and could further the understanding of the image of the city. It is interesting to observe, for example, that while temples are among the most prominent features of the Marble Plan, the fourth-century Regionary Catalogues (compiled after the advent of official Christianity in Rome) mention only the most prominent temples, which would have been landmarks regardless of the esteem they

¹¹⁶ Stambaugh (1988), p. 338, n. 7.

were held in. While churches are completely absent from the list (because so unremarkable as architecture at that time?), there are no tallies of temples to correspond to the careful attention given to the neighborhood *aediculae*. Yet the number of “golden gods” and “ivory gods” are tallied in the *Breviarium*; these are the great cult statues of the city’s temples (amounting to an impressive 80 and 74/77, respectively). What does this selectivity of recognition in the catalogues indicate, if anything, about attitudes toward traditional religion versus Christianity? How modified is the Regionaries’ image of Rome in this respect from the image expressed by the Marble Plan?

The urban form of ancient Rome is partially preserved in the Marble Plan and the Regionary Catalogues. With the assistance of the archaeological and literary records, these documents can resurrect a kind of “virtual” urban Rome--not quite a Pompeii to be strolled in, but perhaps closer to that than we might ever have imagined.

ILLUSTRATIONS

**Figures not otherwise credited
are the work of the author**

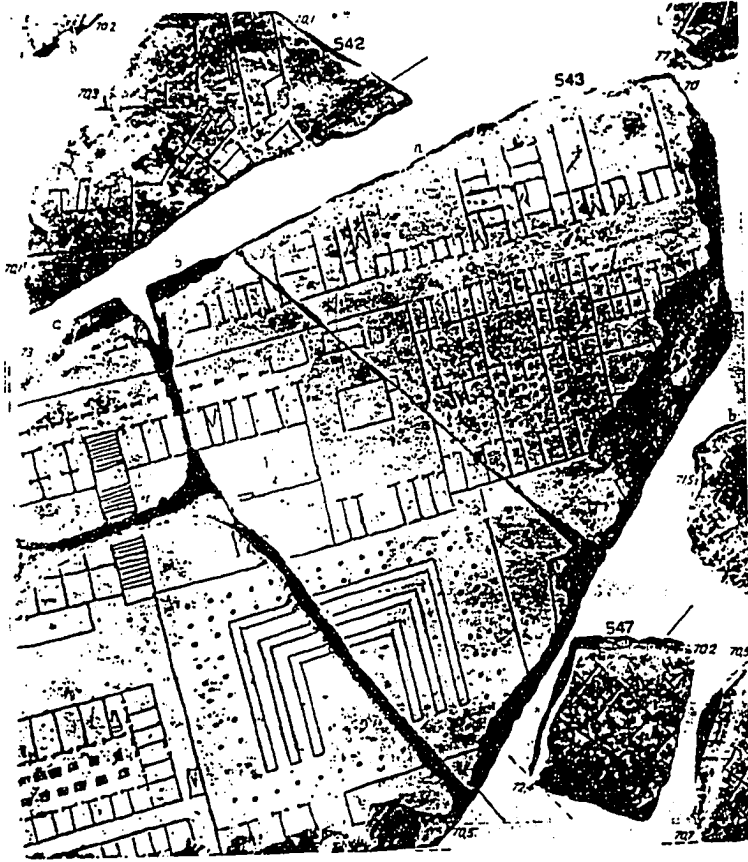


Figure 1.1 Fragments of the Marble Plan. (Harvey (1980), Fig. 73)

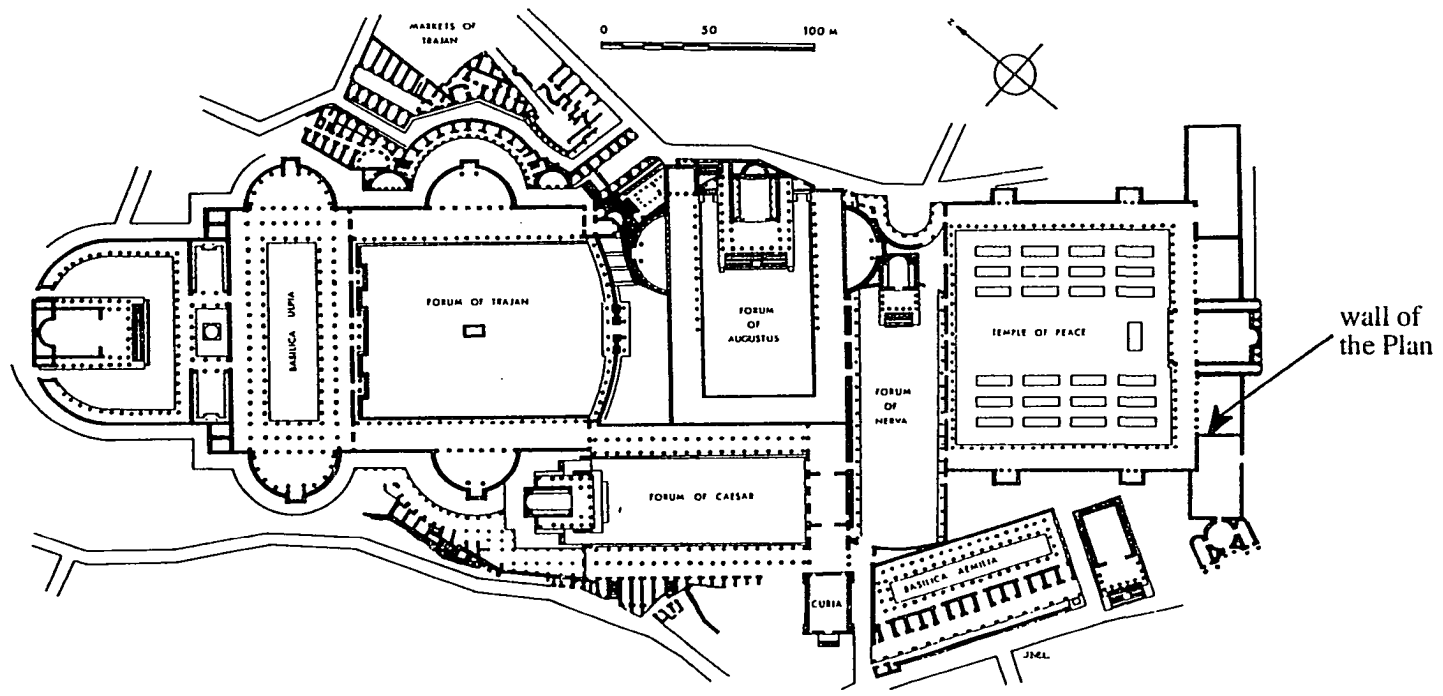


Figure 1.2. The Marble Plan was mounted in the Templum Pacis, or Temple of Peace, at the southeast end of the sequence of Imperial fora in the heart of Rome. (Sear (1982), Fig. 23)

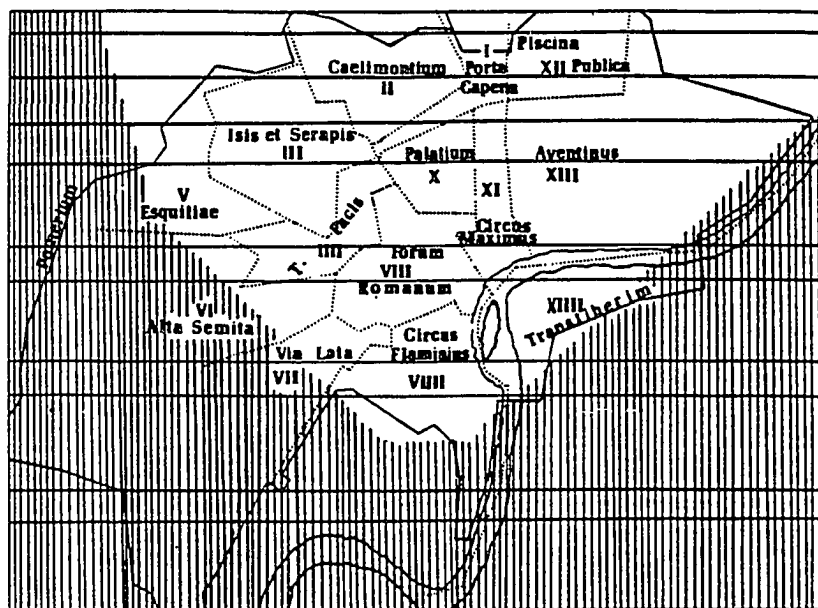


Figure 1.4. Diagram of the Plan showing areas robbed for marble in the Middle Ages (shaded). Only three of the 712 fragments can be placed in the shaded area. The lower third of the Plan was more easily accessible from the ground, explaining its destruction. The middle of the Plan may have survived longer than the sides due to some remaining respect for the monument, or for the concentration of landmarks at its center. (*FUM*, p. 42)

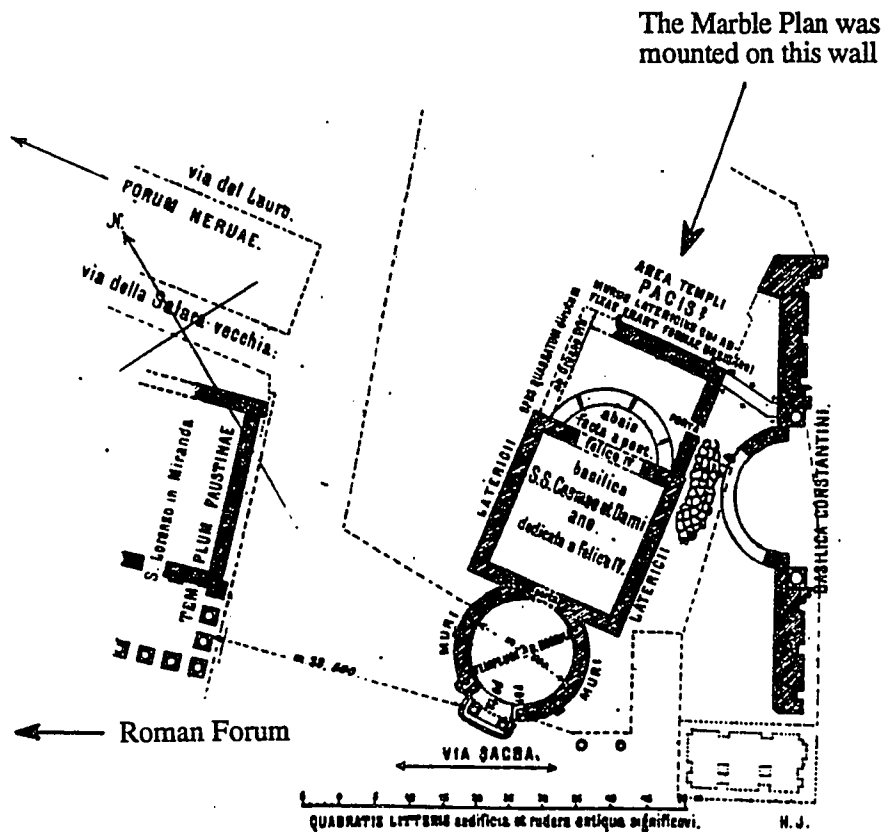


Figure 1.5. The wall on which the Plan was mounted survives as an exterior face of the Church of SS. Cosma and Damiano. (Jordan 1874)

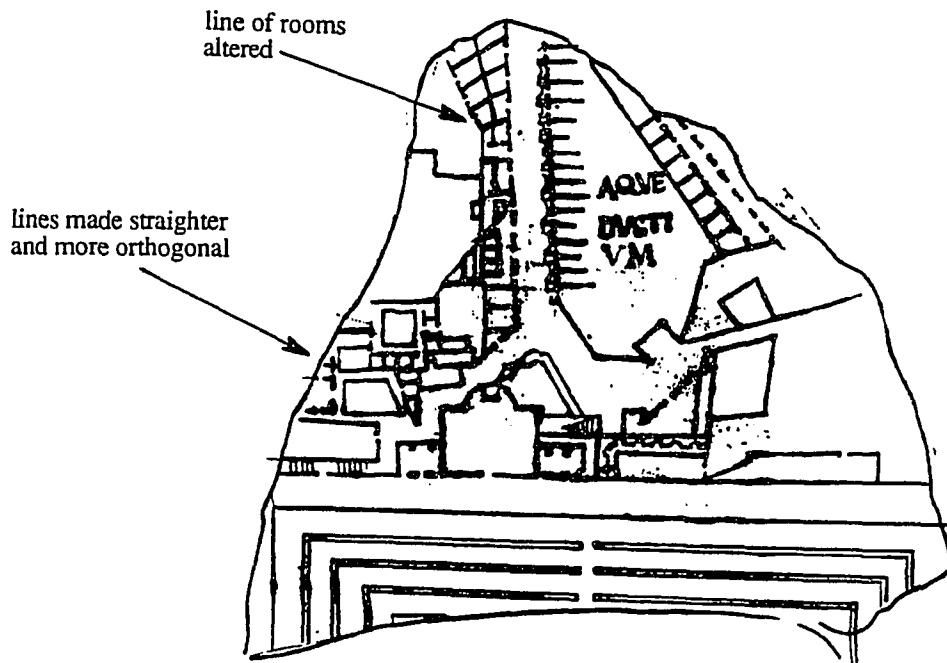


Figure 1.6. An example of one of the “Renaissance drawings” illustrating 91 of the Marble Plan fragments, made in the sixteenth century upon the rediscovery of the Plan. 59 fragments appearing in this collection of drawings have been partly or completely lost since the drawings were made, making the Renaissance drawings vital evidence for the study of the Plan. While largely faithful, the Renaissance drawings may omit small details and tend to ‘rectify’ the lines, straightening them and making them more parallel or perpendicular where possible. Compare to Figure 1.11, and note the Renaissance drawing’s alteration to the line of back-to-back rooms at the top of the image. (fr. 4, from *Vat. Lat. 3439*, Fo 17r.1)

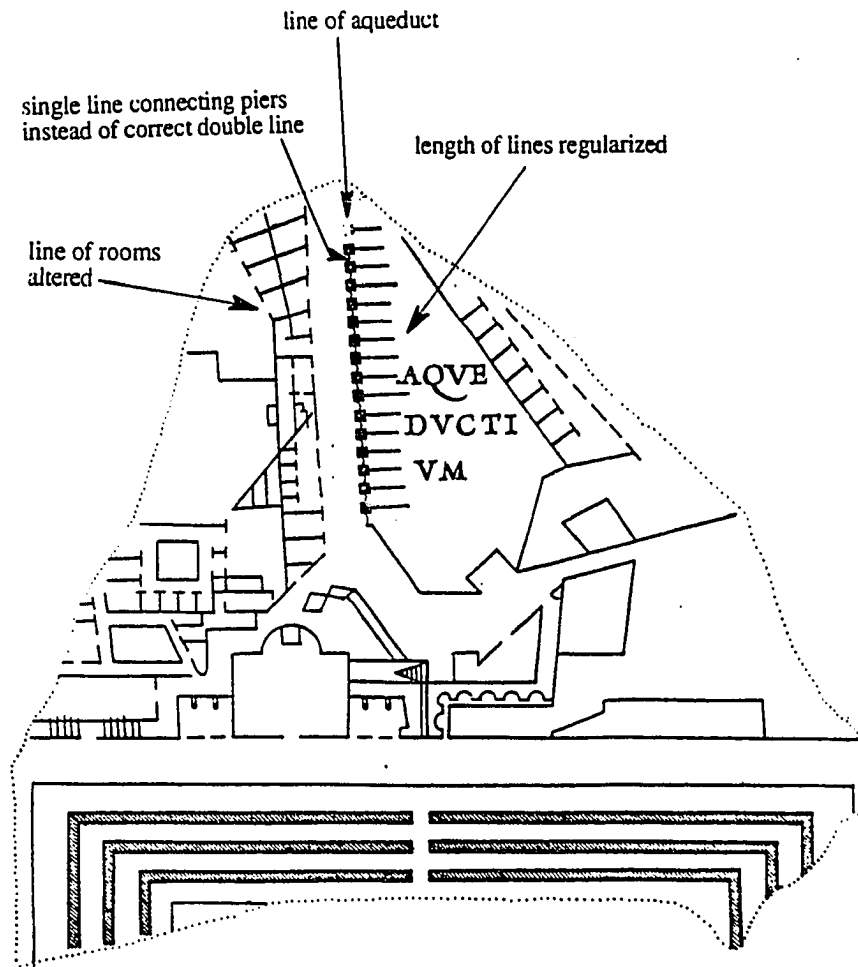


Figure 1.7. Illustrations from the first edition of the Plan, that of Bellori (1672). Bellori perpetuated errors found in the Renaissance drawings (note again the alteration to the line of back-to-back rooms), and also 'rectified' lines in all his illustrations. Note here his treatment of the line of aqueduct arches—instead of two lines connecting each pier (square), Bellori shows one, muddling the sense of the standard arch symbol. He also omits the 'serifs' at the ends of the lines projecting from aqueduct piers, and regularizes their lengths somewhat. (Bellori 1672, pl. 1)

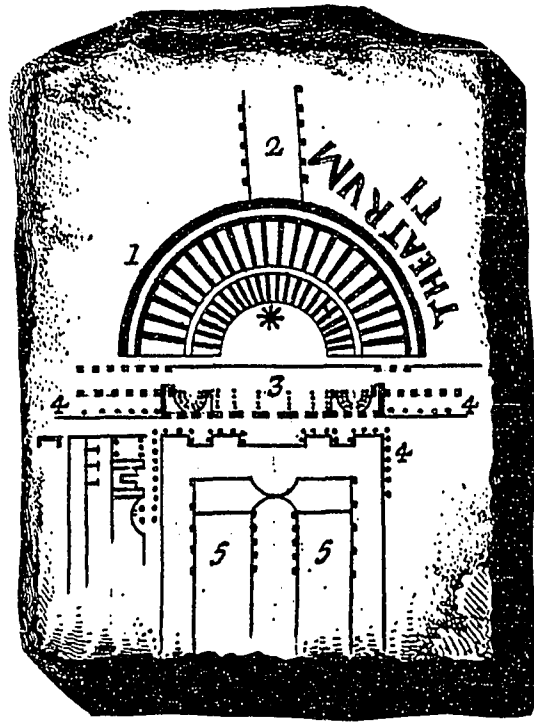


Figure 1.8. G. B. Piranesi was justly famous in the 18th century for his romantic engravings of the ruins of ancient Rome, and in several of his works he illustrated fragments of the Marble Plan. This example shows that, with the Plan fragments, Piranesi was more concerned with atmosphere than scientific detail—the image he has depicted here as a marble fragment was in fact known to him only through one of the Renaissance drawings. As a result the image is very misleading, though it was never intended as a scholarly publication. (Piranesi 1763)

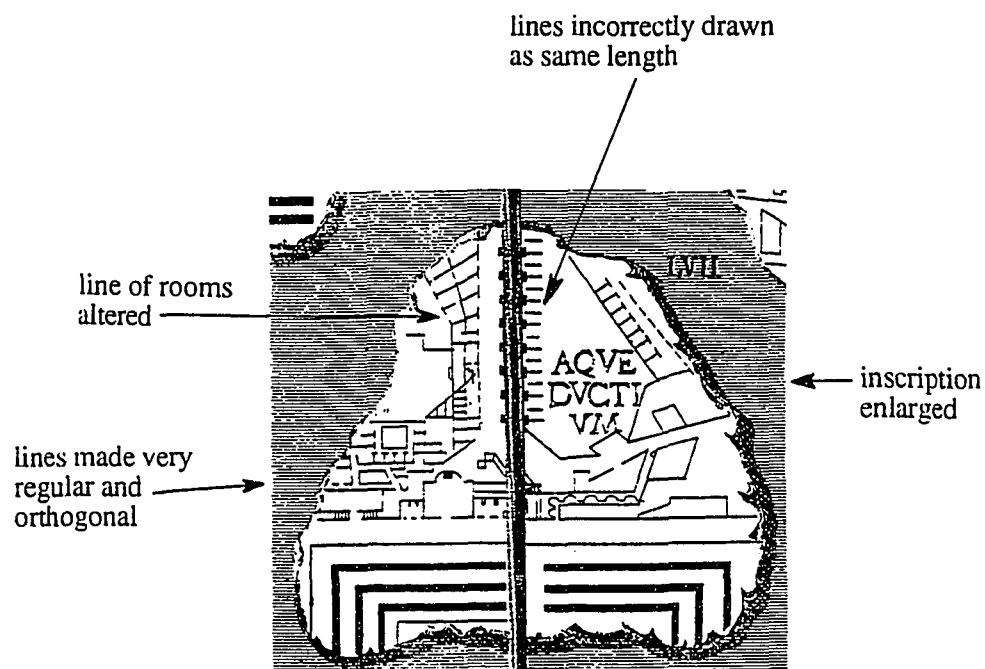


Figure 1.9. L. Canina was one of the foremost Roman topographers of the early nineteenth century, and he employed the evidence of the Marble Plan in a number of works, including a map of ancient Rome. Canina had perhaps the strongest taste for 'rectifying' the originals of all the Plan's illustrators, as can be seen in this engraving of fr. 4, where he has made the lines projecting from the aqueduct piers perfectly regular in length. He continues to perpetuate errors of the Renaissance drawings and of Bellori through reliance on Bellori's edition of the Plan, as the alteration of the line of back-to-back rooms shows. Canina illustrated the fragments at a small scale, so he often enlarged the inscriptions appearing on them for legibility, as here. (fr. 4, Canina 1850)

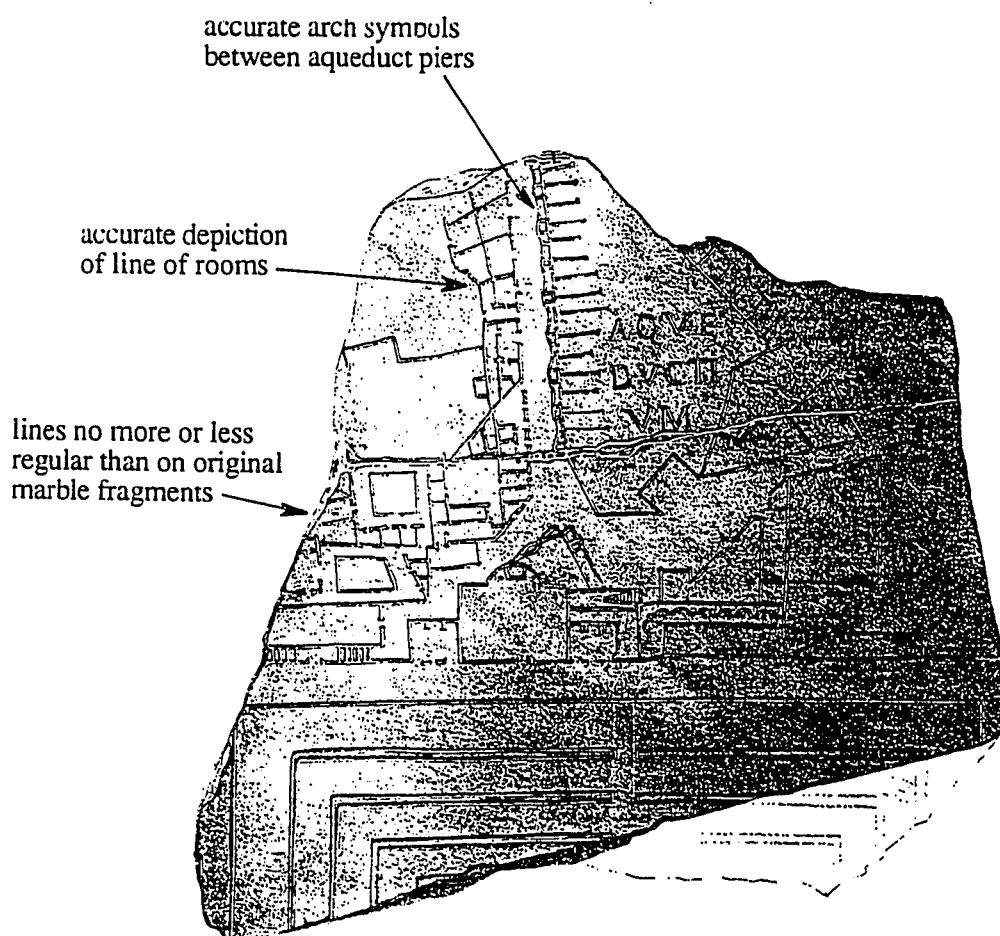


Figure 1.10. H. Jordan's edition of the Marble Plan in 1874 was the first comprehensive, scientific study of the monument. Jordan's engravings are at times even clearer than the photographs provided by the 1960 edition of the Plan. These exceptionally well-crafted illustrations are probably as perfect as could be produced without mechanical or photographic imaging assistance. The irregularities seen in the lines of this example are not artifacts of the nineteenth-century copyist, but faithfully reflect the features of the original marble. Compare to Figure 1.11 and note the accurate presentation of the aqueduct arches, the lines projecting from them, and the accurate depiction of the line of back-to-back rooms. (fr. 4, Jordan 1874, pl. 10)

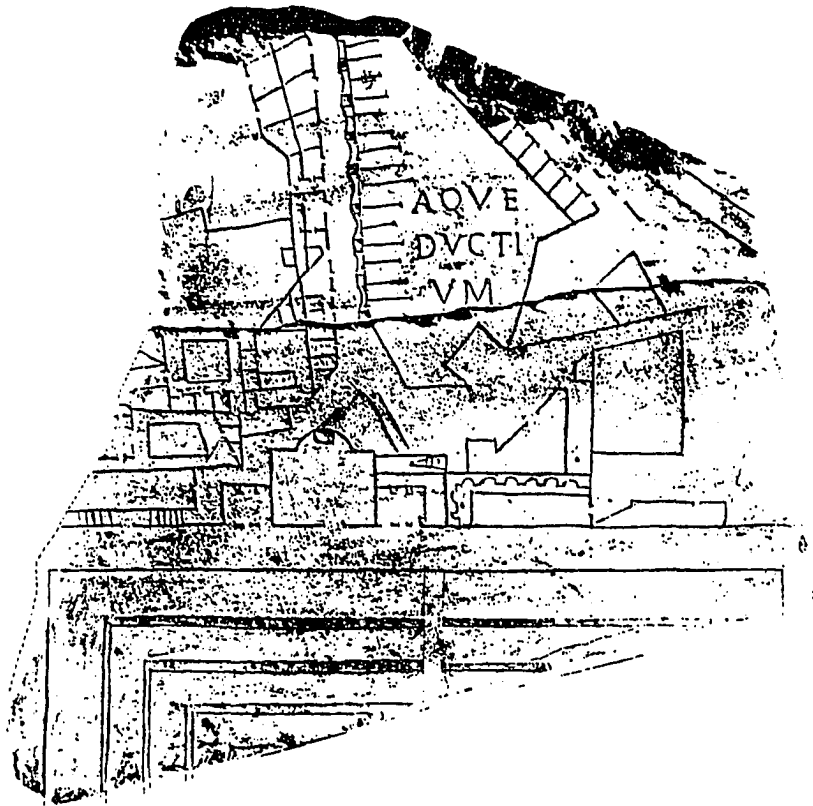


Figure 1.11. The landmark edition of the Marble Plan in 1960 by Carettoni *et al.* provided a complete photographic record of all Plan fragments which stands as the primary reference for study of the Plan today. (fr. 4, *PM*)

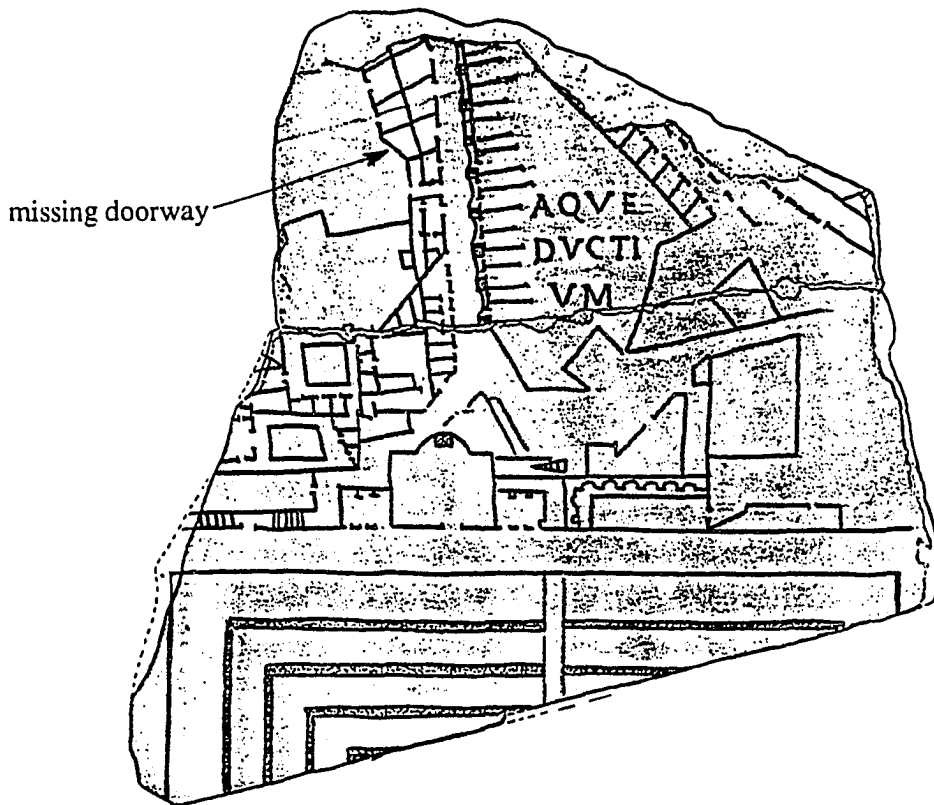


Figure 1.12. Rodríguez-Almeida redrew all the Plan fragments for his general supplement to the 1960 edition of the Plan. The finest aspects of the engraving are unavoidably lost in these drawings, but they are much easier to read than the detailed photos of the 1960 edition and they serve as the most useful general reference for the architecture depicted on the fragments. Unlike illustrators who typically regularized the lines of the Plan, Rodríguez-Almeida if anything introduces slight irregularities. This illustration of fr. 4 shows a minuscule error in the omission of a small doorway. (*FUM*)

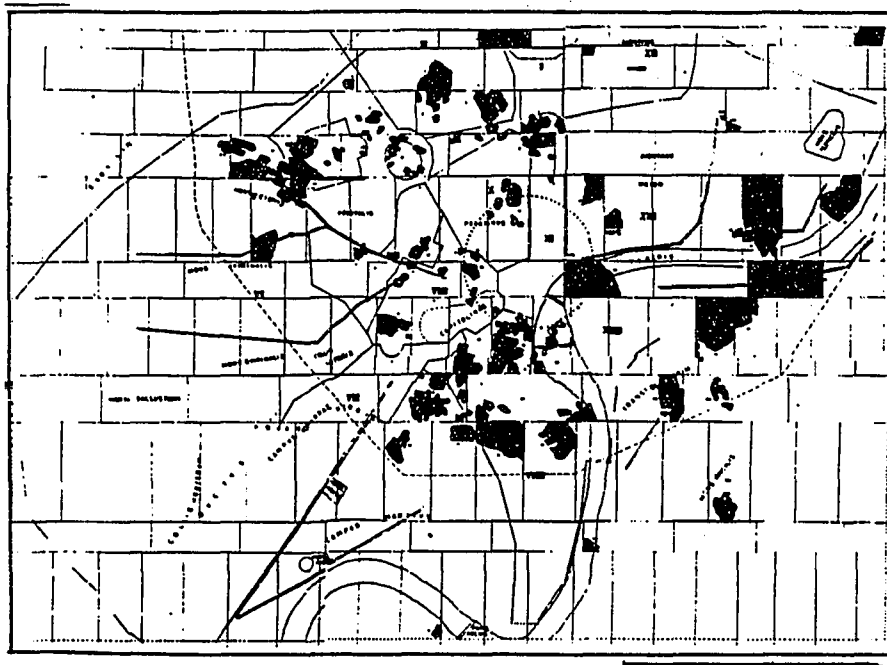


Figure 1.13. Diagram showing the Plan with fragments (in black) that can be securely placed, amountin to 5% of the original total. An additional 5% is preserved but cannot be placed. This figure presents a graphic demonstration of the portion of the Plan that survives. (*FUM*)

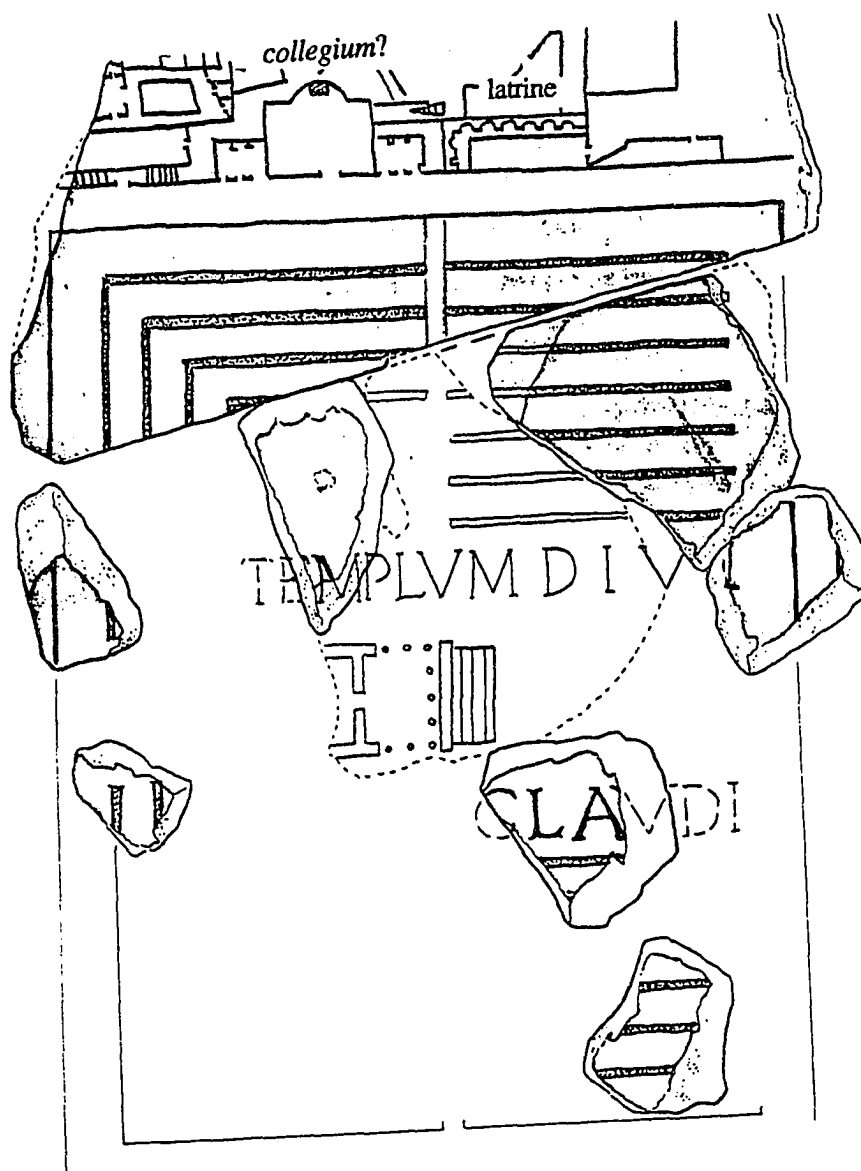


Figure 1.14. Marble Plan representation of Temple complex of Divine Claudius (fr. 5). The fragment depicting the temple itself is lost; this part of the image (surrounded by dashed line) is known from the Renaissance drawings. The parallel features appearing within the large courtyard are garden features of some kind. At the top of the image is an apsed, symmetrical structure with an altar base in the apse: this building may have been a *collegium* for priests dedicated to the worship of Divine Claudius. To the right of this building is a public latrine. (*FUM*, fr. 5.)

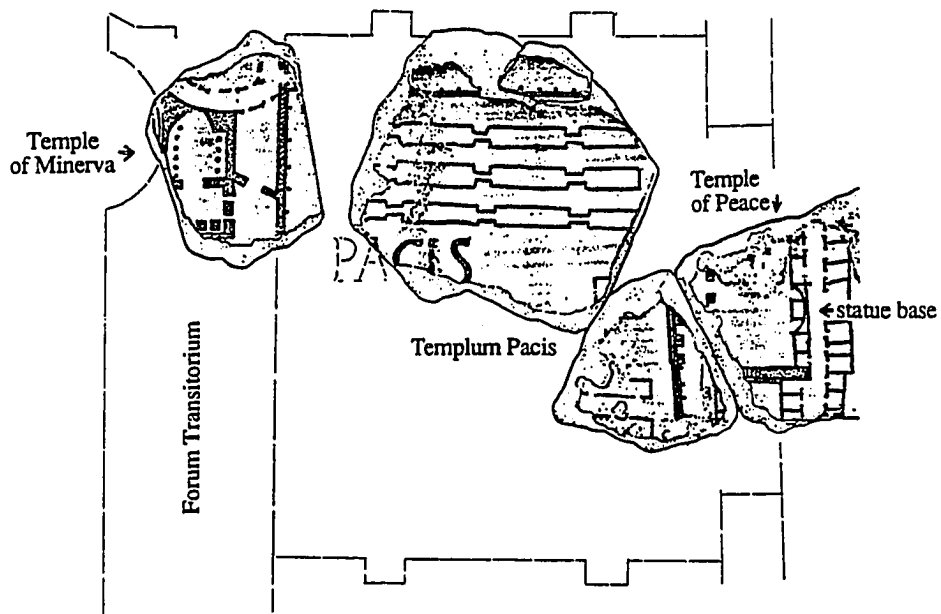


Figure 1.15. Marble Plan representation of the Templum Pacis (fr. 15). The linked rectangular shapes are probably garden features of some kind. The Temple to Peace is the apsed structure appearing in the center right of the enclosure; the base for the cult statue may be seen in the apse. To the left of the Templum Pacis enclosure is the Forum Transitorium, with the Temple of Minerva appearing at the top; a small entrance to the Templum Pacis complex may be discerned at the top of this fragment. (*FUM*, fr. 15.)

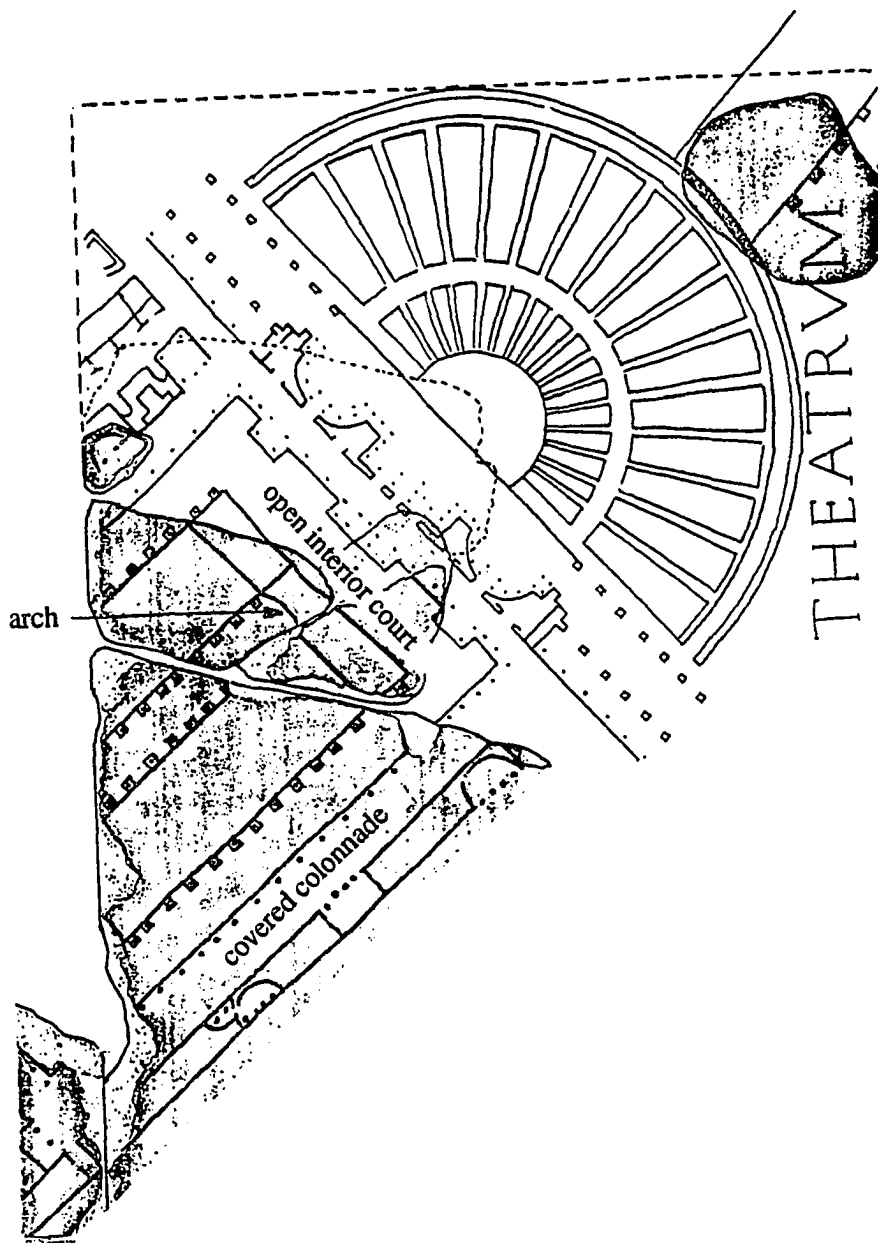


Figure 1.16. Marble Plan representation of the Portico (and Theater) of Pompey. A covered colonnade is shown to run around the perimeter of the Portico, while four rows of dotted squares which may be trees or columns run down the interior of the space. A symbol indicating a large arch appears; this is the arch upon which Augustus placed the famous statue of Pompey after Pompey's death. (*FUM*, fr. 39)

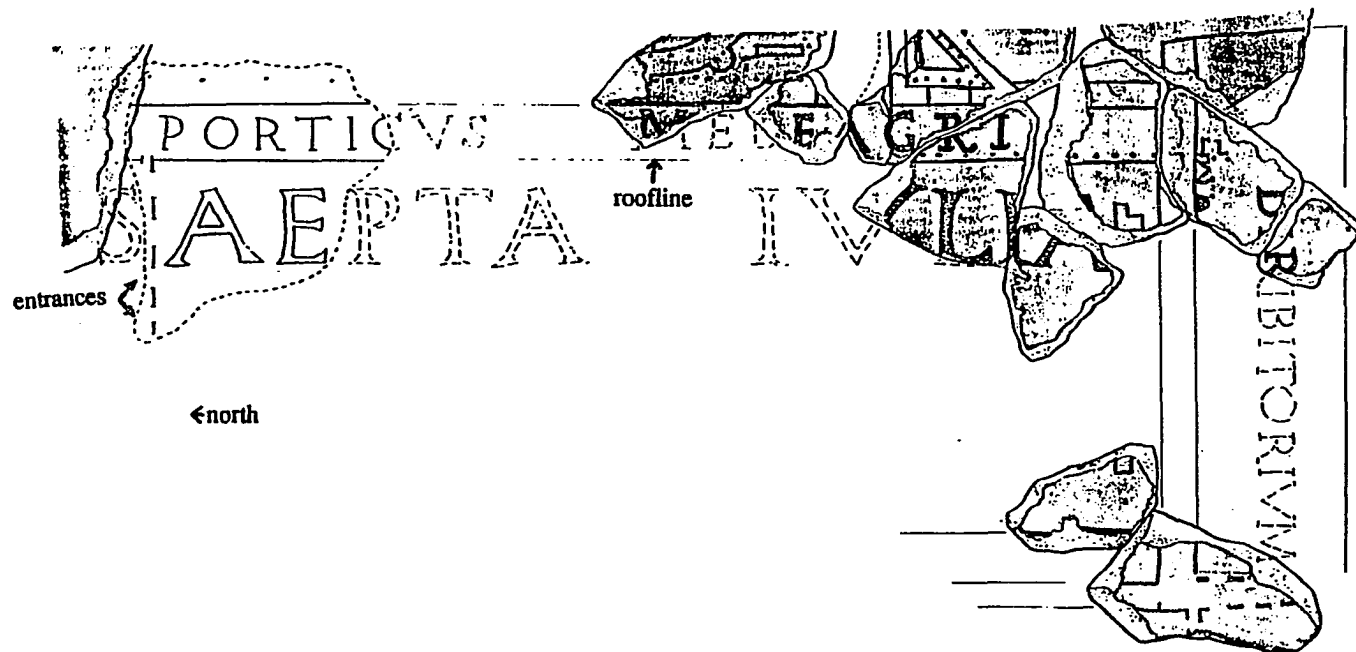


Figure 1.17. Marble Plan representation of the Saepta Julia. Little more than the overall magnitude (and the entrances to the north) are revealed, but this was enough to allow the secure identification of the archaeological remains. The Porticus of Meleager (MELEAGRI), a covered colonnade, is labeled. Its roofline is indicated, a notation that is not always indicated on the Plan. (*FUM*, fr. 35, 36)

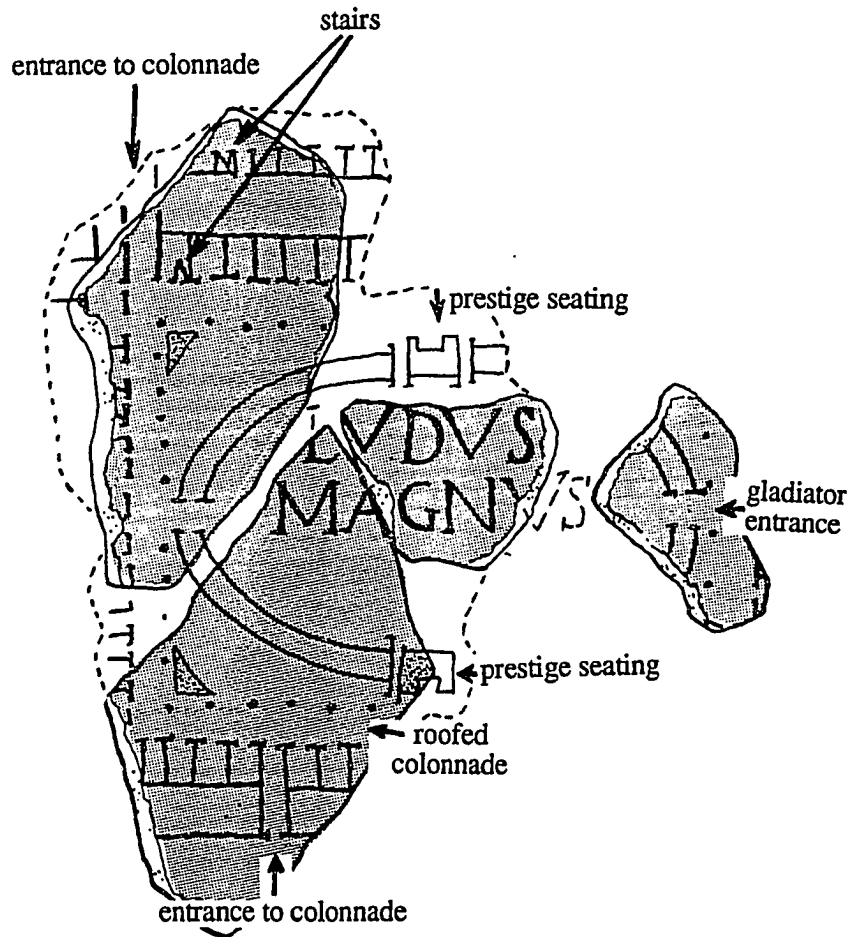


Figure 1.18. Marble Plan representation of the Ludus Magnus. The 'V' staircase symbols indicate that the structure was multi-storied. The lines of dots represent a covered colonnade. The curved lines are a schematic representation of the seating surrounding the arena, with prestige seating boxes in the middles of the long sides of the oval. At the ends of the oval are entrances for the combatants. The numerous small chambers around the building were rooms for the gladiators and their equipment. (*FUM*, fr. 6b-e)

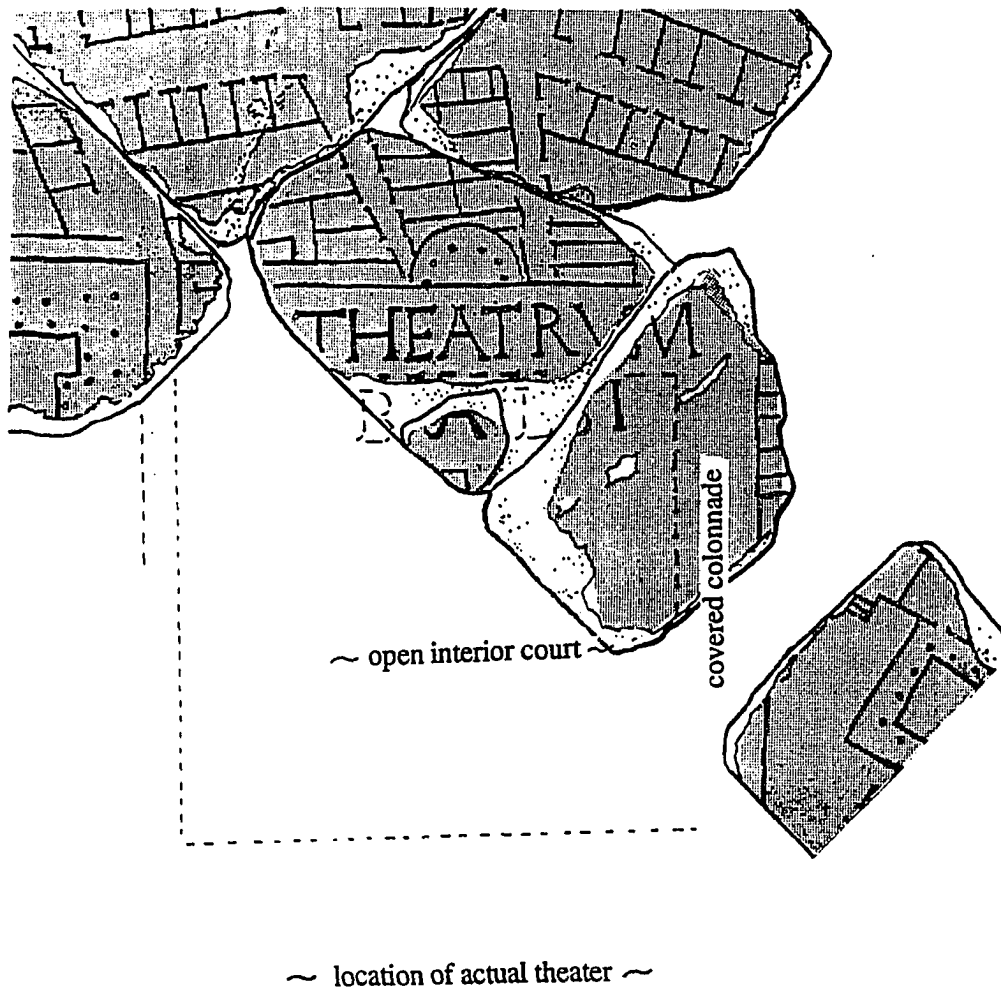


Figure 1.19. Marble Plan representation of the Theater of Balbus. These fragments actually show part of the Crypta Balbi, the portico adjacent to the theater which provided shelter for spectators during inclement weather. A dashed line within the portico indicates a colonnade surrounding the interior space. The theater itself lay just below the roughly square enclosure indicated by the dashed line; it has been located archaeologically. It was the placement of these fragments with their inscription that provided positive identification for the remains of the theater.
(FUM)

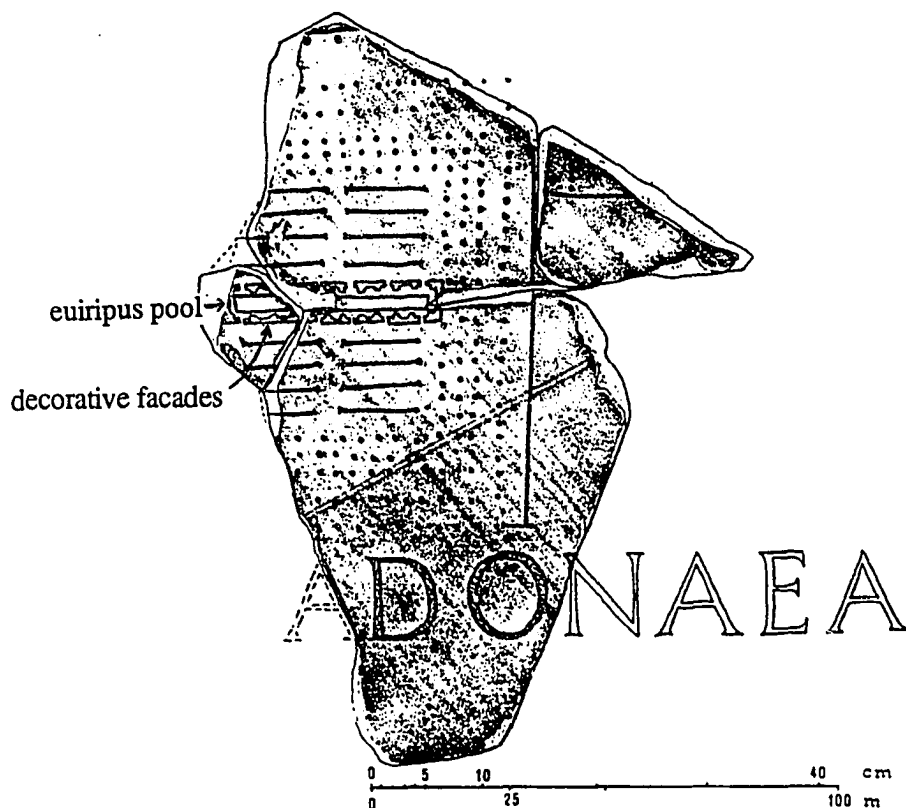


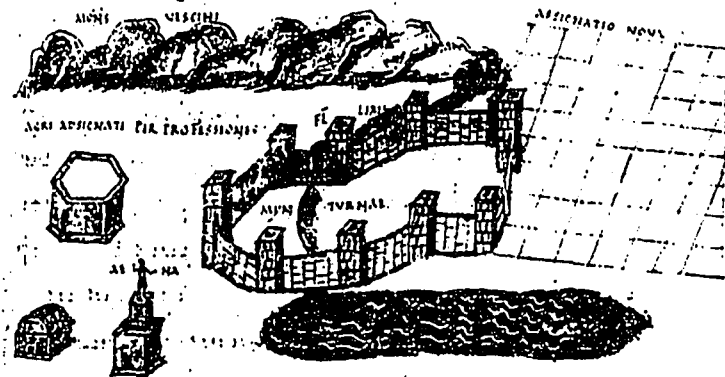
Figure 1.20. Marble Plan representation of the Adonaea. This structure, in spite of its large size, is not securely known from any literary mentions. The closely-spaced files of dots have been the subject of considerable speculation; the best hypothesis is that they represent the supports for an arbor. The feature in the center of the court is a *euripus*, an elongated pool of water surrounded by decorative facade architecture. The long dashes with serifs remain enigmatic. (*FUM*, fr. 46)

bus continetur. terminata in extremitate more arcu
finis per demonstrationes & locorum uocabula.



Quibusdam coloniis postea constitutis sicut in africa
ad medere .d. n. & k. ex his acuitate ortur & per que

finium commutatione relicta primae assignationis
terminis more arcifinio possidetur.



Multas ergo generibus limitum constitutiones in
choatae sunt. quibusdam coloniis .k. n. & .d. n. non

Figure 1.21. Illustrations from the *Corpus Agrimensorum*. These pictures show the exaggerated scale of significant features and the birdseye perspective seen in this genre of teaching diagrams, or cartoons. (Dilke 1985, Figs. 9 and 10)

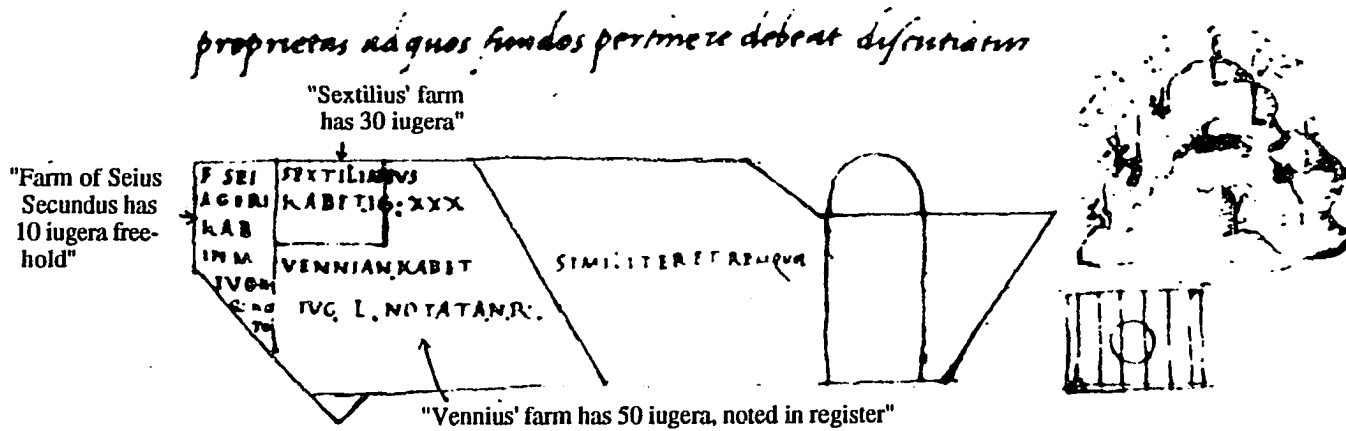


Figure 1.22. Cadastral sector diagram from the *Corpus Agrimensorum*. This diagram represents what the actual product of an agrimensor's work would have looked like, unlike the teaching cartoons. Here we see geometrically-delineated property boundaries, annotated with ownership and area measurements relating to tax obligations. (Dilke 1987, Fig. 13.14)

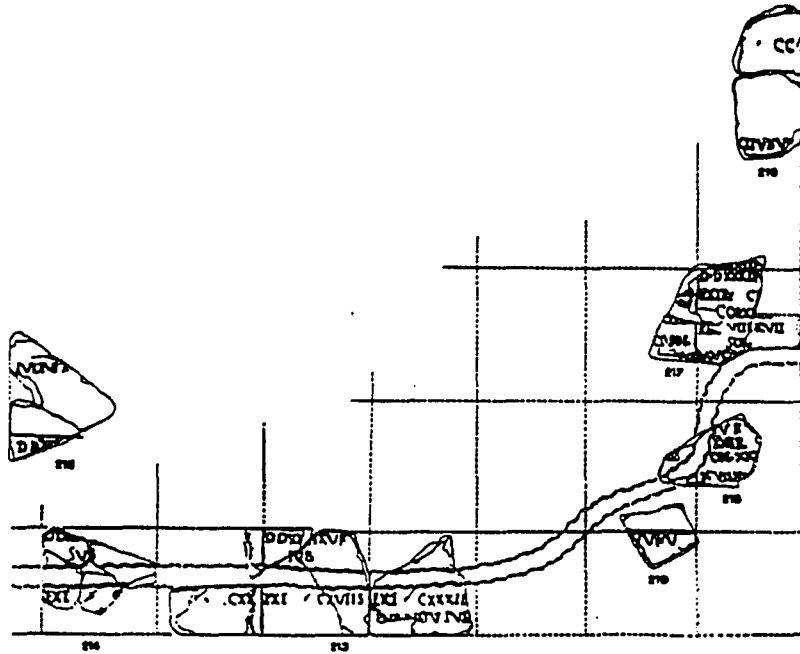


Figure 1.23. A portion of the Orange Cadasters, showing the course of a river through surveyed land with tax records marked in each parcel. (Dilke 1985, fig. 20)



Figure 1.24. Section of Orange Cadaster "A" (fragment 7). The single lines indicate the pattern of centuriation dividing the farmland into regular plots, annotated with area measurements and tax obligation status. Two roads running across the grain of centuriation appear, on either side of a river and its island. The roads and rivers appear in this centuriation plan because they could be significant boundary features. (Based on Harvey 1980, fig. 72)

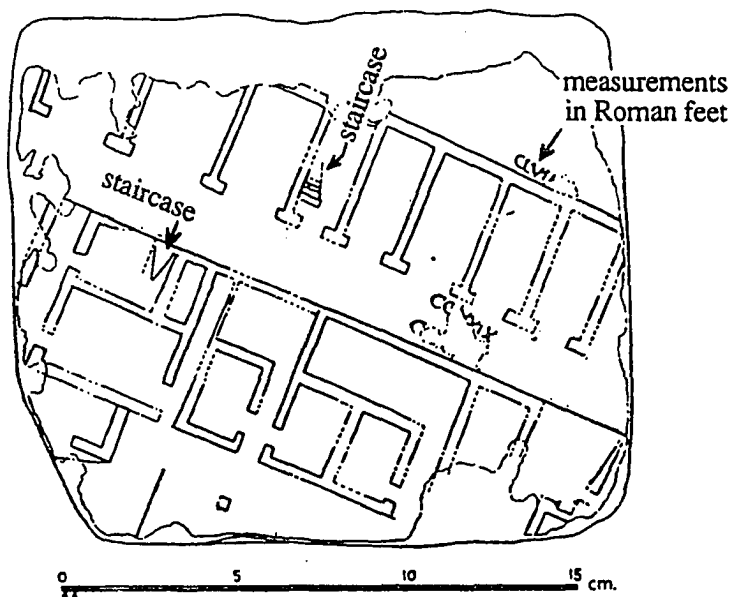


Figure 1.25. The Isola Sacra Plan. Though badly damaged, the regular plan and careful delineation allow this reconstruction (in which missing sections are indicated by dotted lines). The 'V' staircase symbol may be seen in two places. The numerals are measurements. (Modified from *PM*, p. 208)

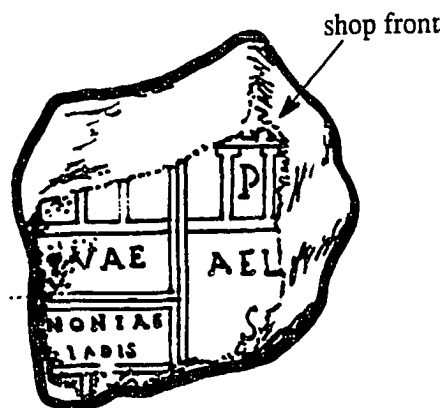


Figure 1.26. The Via Labicana Plan. Although only a small fragment, this plan is another example of the use of consistent conventions. Walls are indicated with double lines. Names in the genitive indicate ownership. (Based on *PM*, Fig. 47)

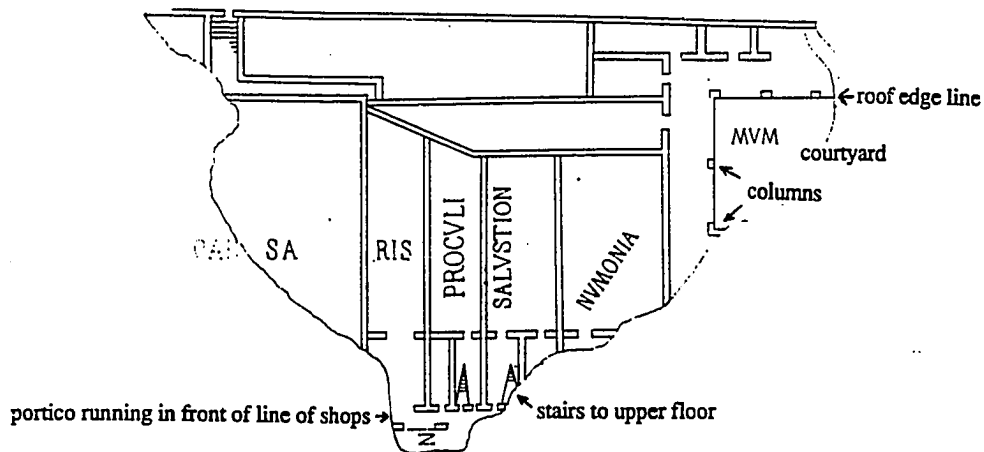


Figure 1.27. The Amerino Plan (redrawn from original for clarity). This significant fragment demonstrates standard conventions, particularly the roof edge (drawn as a single line around the courtyard seen on the right), and the 'V' staircase symbol showing access to upper floors. (Modified from Jordan 1874)

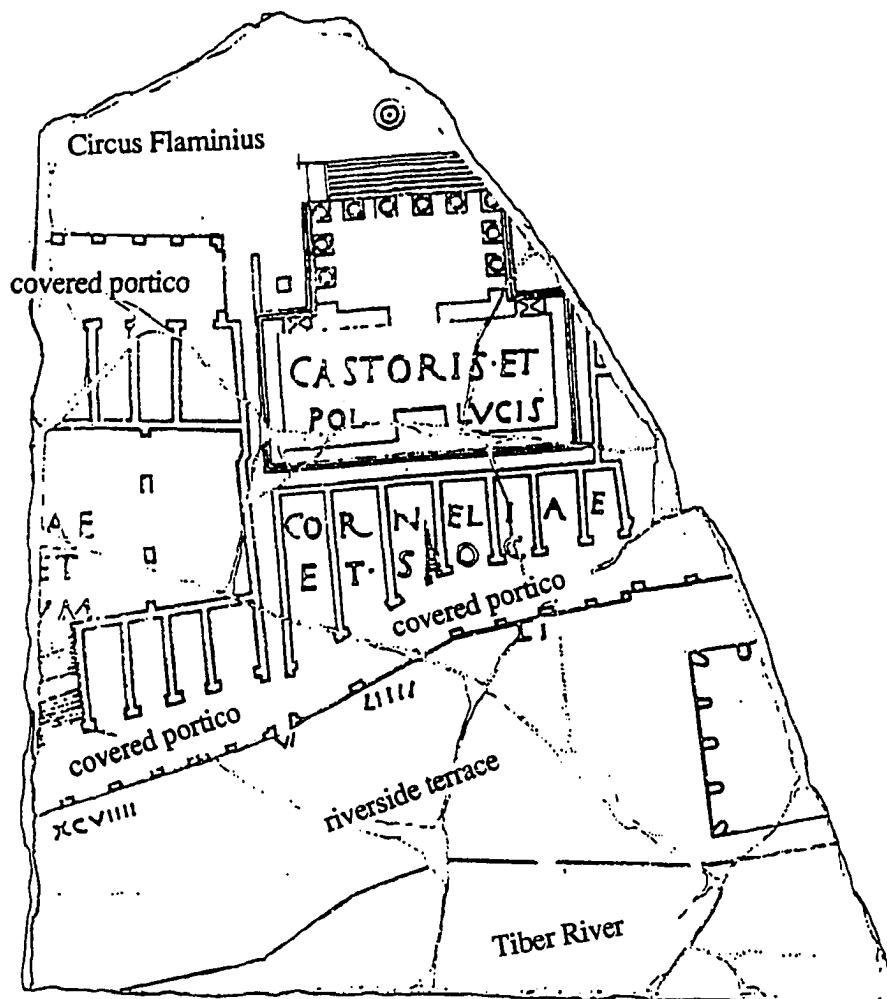


Figure 1.28. The Via Anicia Plan. This detailed plan is the best example we possess of the work of the urban surveyors. Tabernae feature prominently in this fragment, with covered porticoes running in front of them in every case. The single line at the bottom of the plan indicates the edge of a river-shore terrace on which the structure seen partially at the right sits. (Modified from Rodríguez-Almeida 1988, Fig. 2)

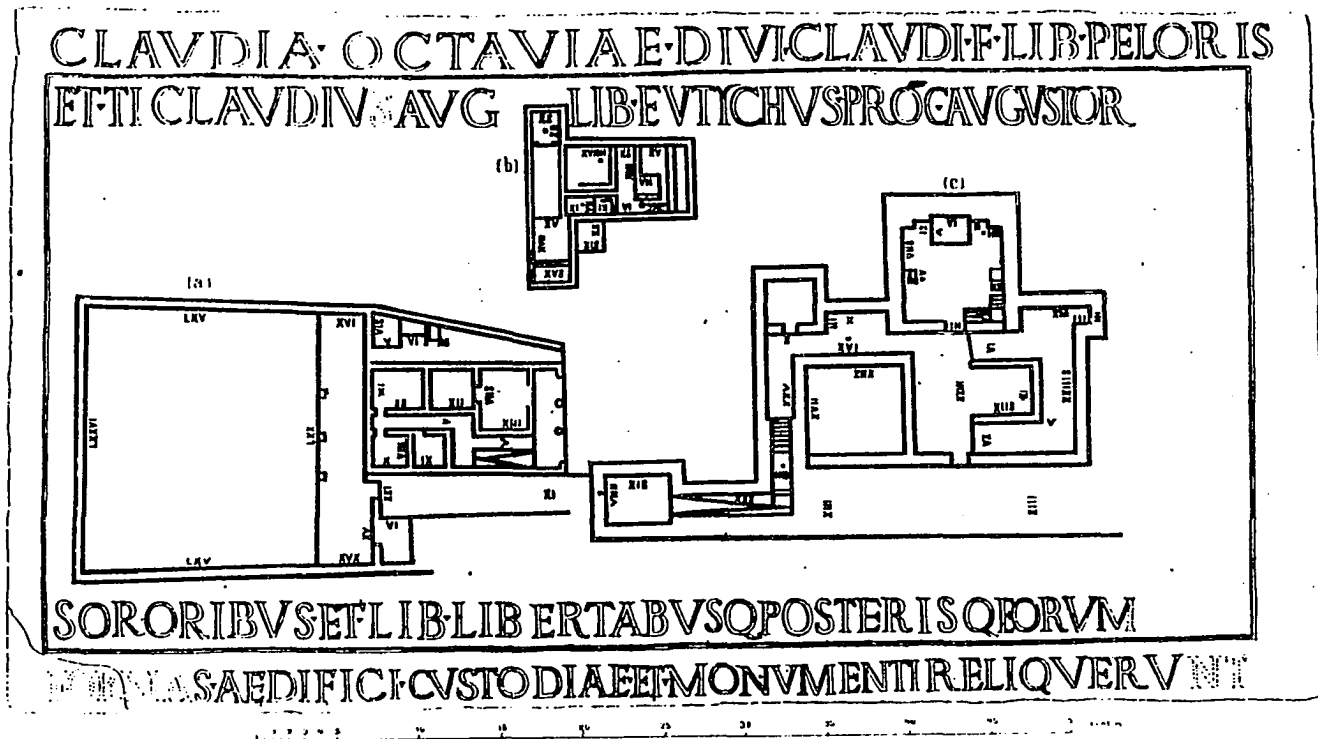


Figure 1.29. The Perugia Plan. In the plan on the left, the ground floor of the custodial building appears, with an enclosure wall around an open court, and a covered portico adjoining the building (scale about 1: 140). The center plan shows the upper floor of this same structure; the line of rooms on the left were ranged over the portico just mentioned (scale about 1: 230). The plan on the right depicts the sepulchral structures overseen by the those stationed in the custodial building (scale about 1: 84). (Jordan (1874))

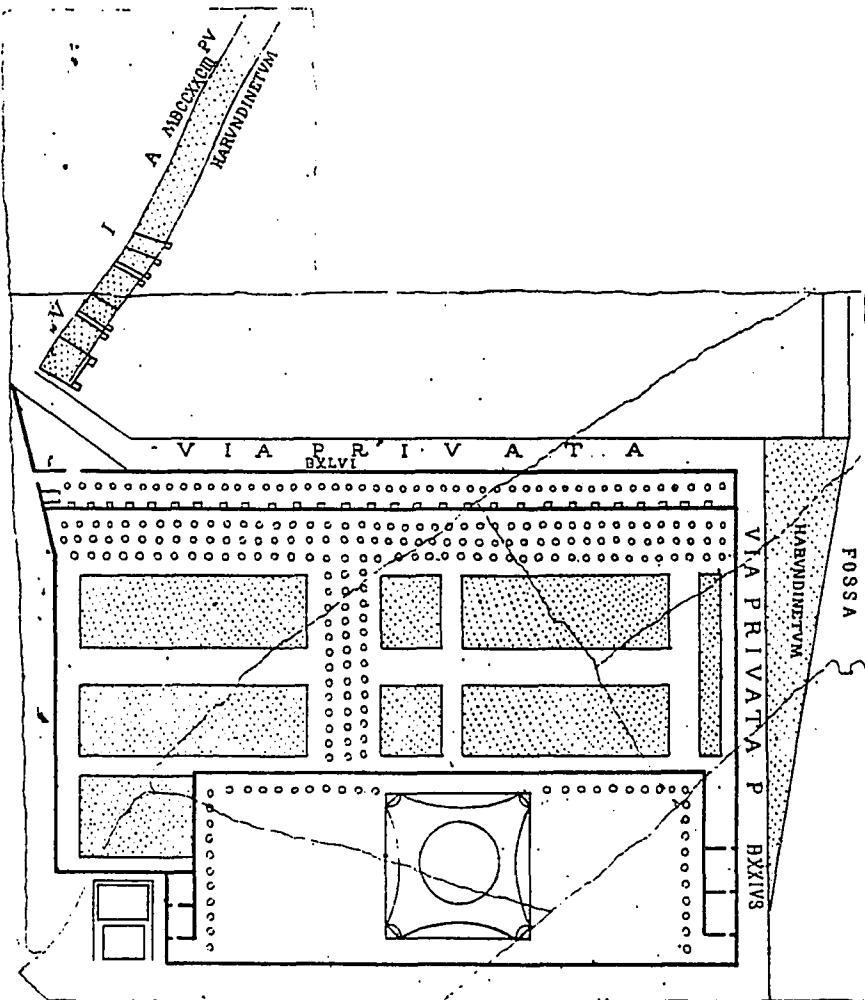


Figure 1.30. The Urbino Plan. The most prominent inscriptions on this plan of a private estate distinguish a private road from the public street. The structure with the circle at its center is probably a tomb monument, the regular rows and enclosures before it representing decorative plantings. (Jordan 1874)

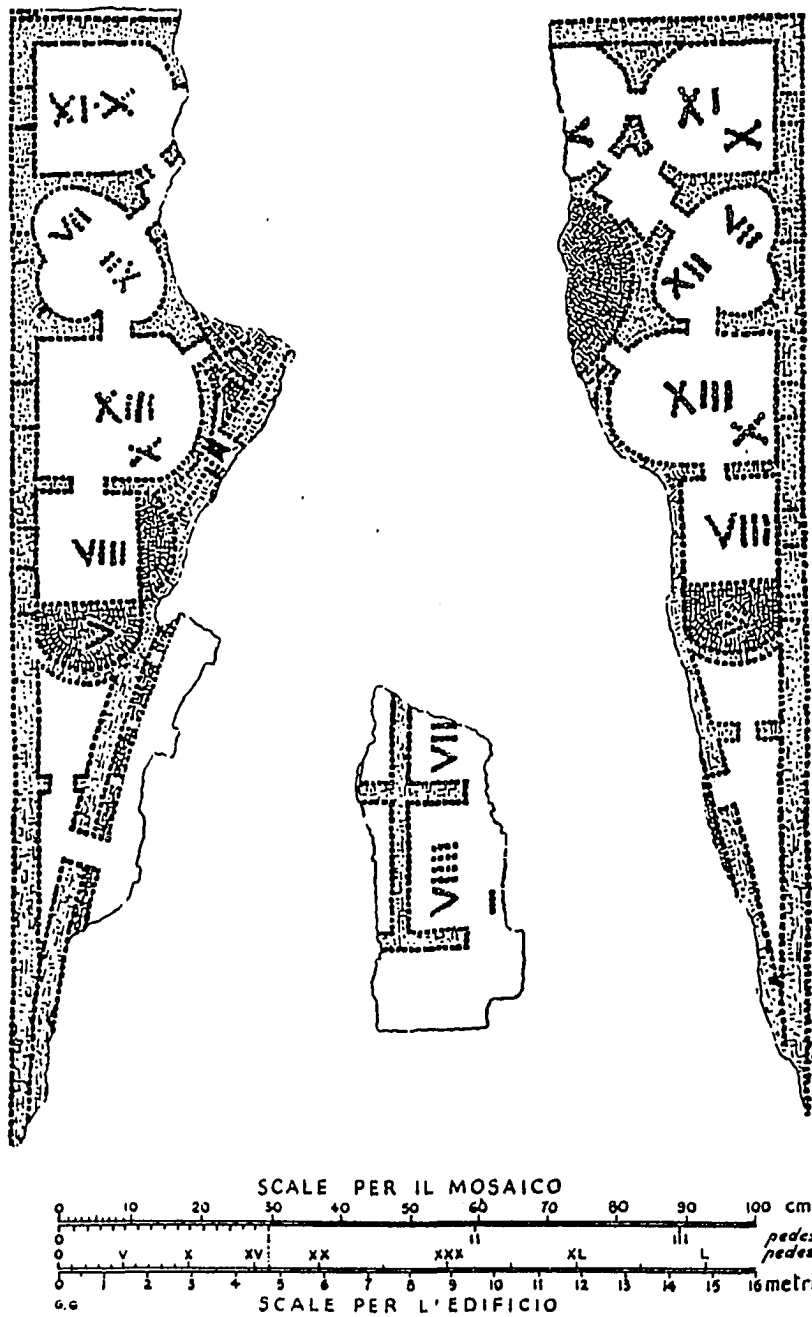


Figure 1.31. The Bath Mosaic. Here again are Roman numerals indicating measurements in Roman feet. The double-line convention outlining the walls is also employed here. The scale is 1:16, one *dignus* (finger) to one *pes* (foot). (PM, p. 209)

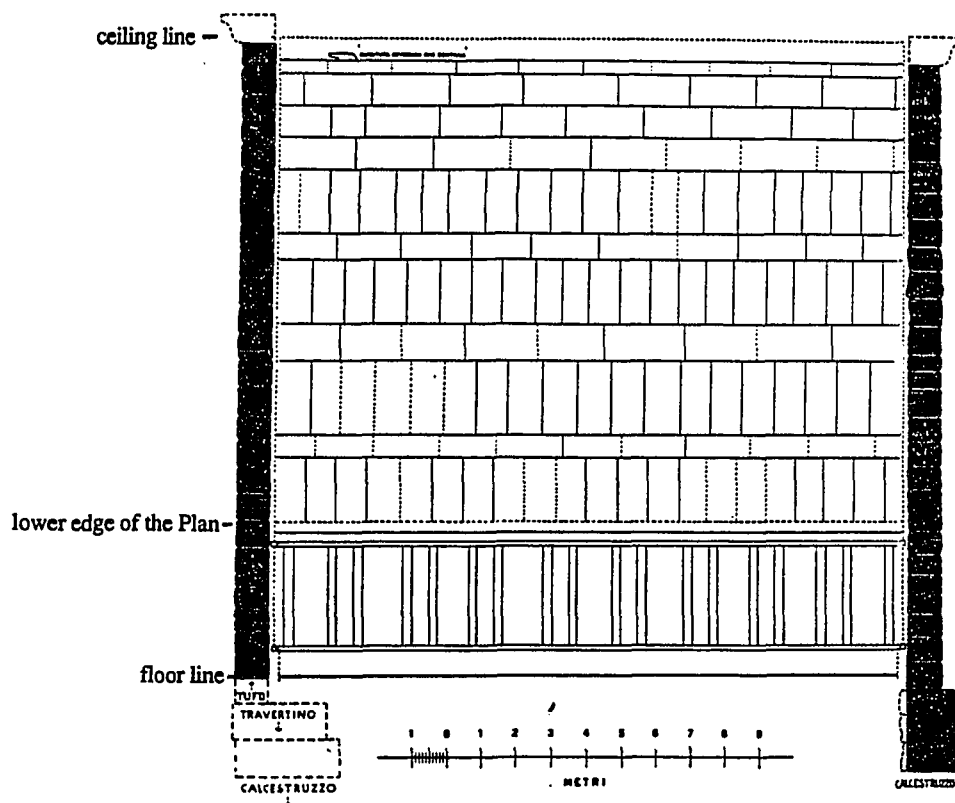


Figure 1.32. Diagram of the original arrangement of marble slabs that made up the Plan. The lowermost register of large vertical panels was not devoted to the Plan, but instead was wall space elevating the Plan above the point where anyone would come into contact with it. The dashed line running above this register marks the lower edge of the Plan. (*PM*, p. 181)

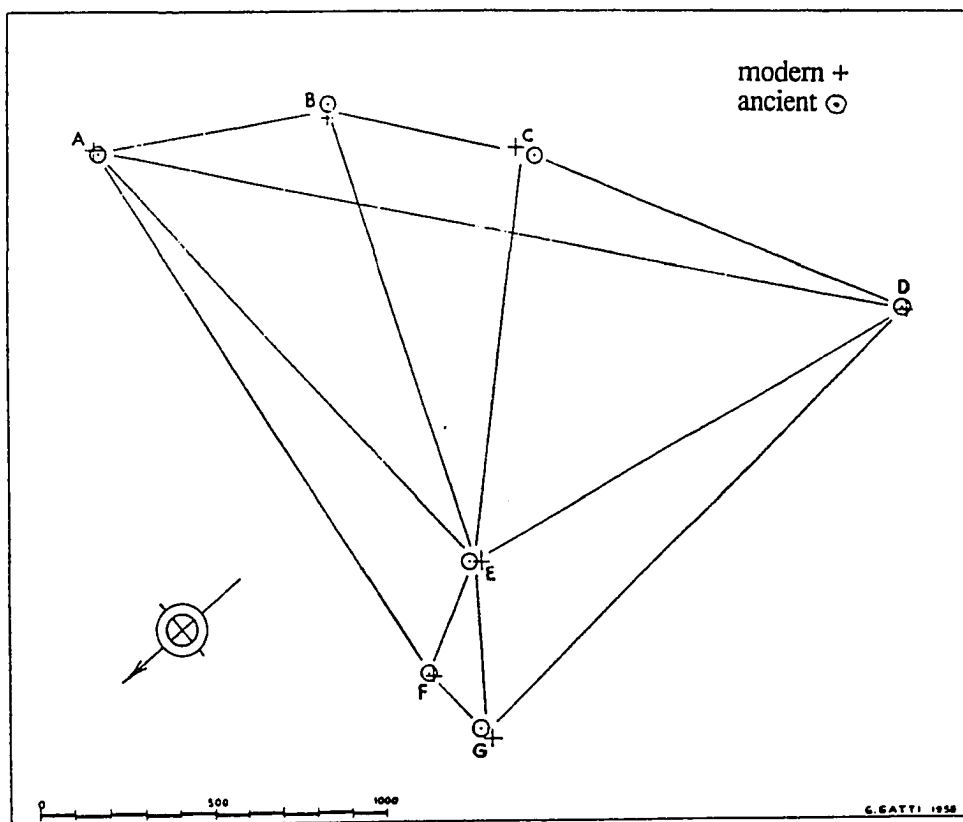


Figure 1.33. Minute survey discrepancies between the Forma Urbis and a 20th century survey. Gatti marked prominent geographic and architectural reference points on both surveys for comparison. The diagram graphically shows the small degree of discrepancy between the two. (*PM*, p. 231)

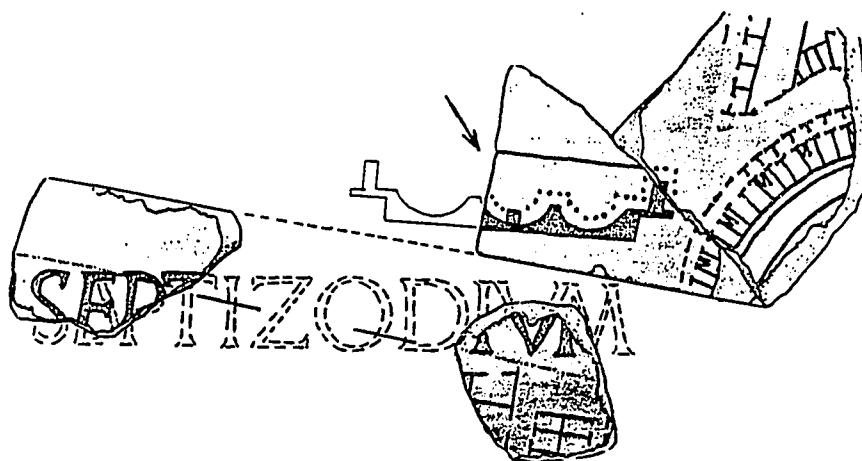


Figure 1.34. Marble Plan representation of the Septizodium. This monument was dedicated in A.D. 203, and its presence on the Plan provides a *terminus post quem* for the Plan's creation. (*FUM*, fr. 8.)

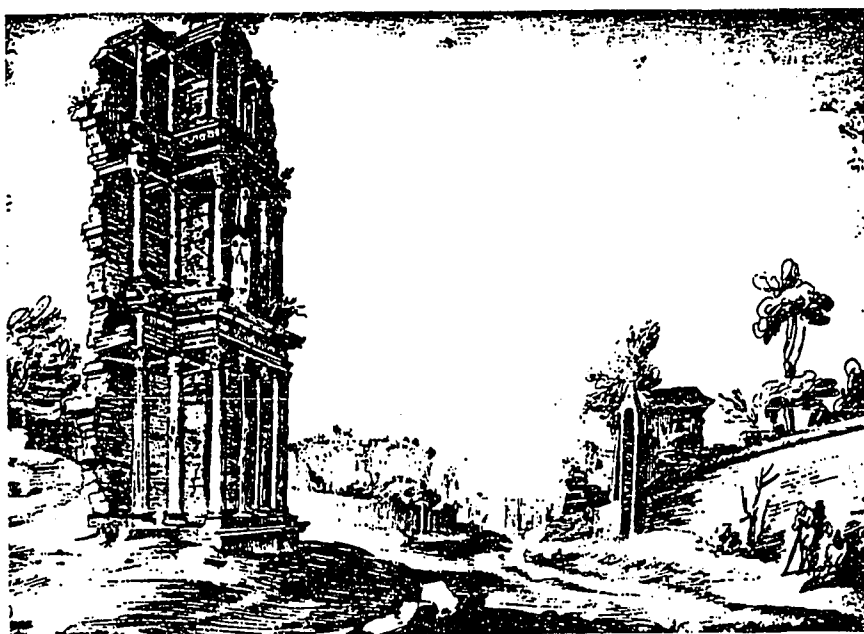


Figure 1.35. The Septizodium in a Renaissance drawing by Jan Brueghel. Only the north end of the distinctive structure survived at this time. (From Nash, vol. 2, fig. 1066)

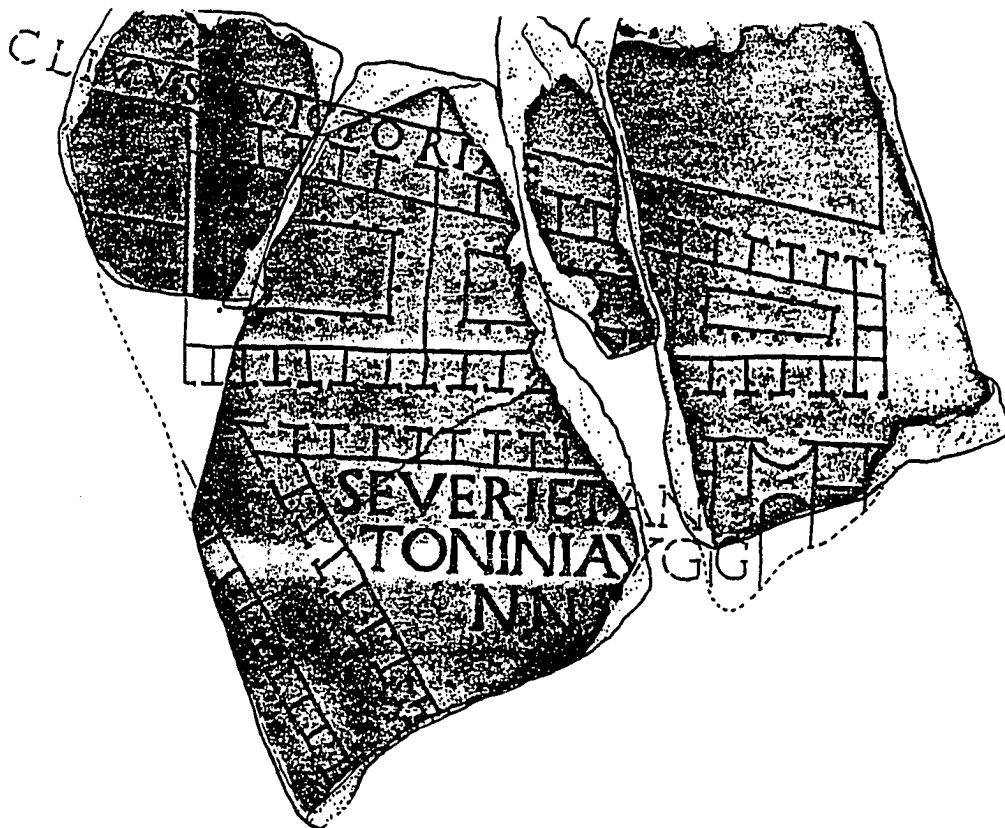


Figure 1.36. "SEVERI ET ANTONINI AVGG NN" This inscription on the Plan identifies a building not yet complete as being constructed in the names of the joint emperors Severus and Caracalla. Severus died on 4 Feb. A.D. 211, so this inscription provides a *terminus ante quem* for the Plan. (FUM, fr. 5A)

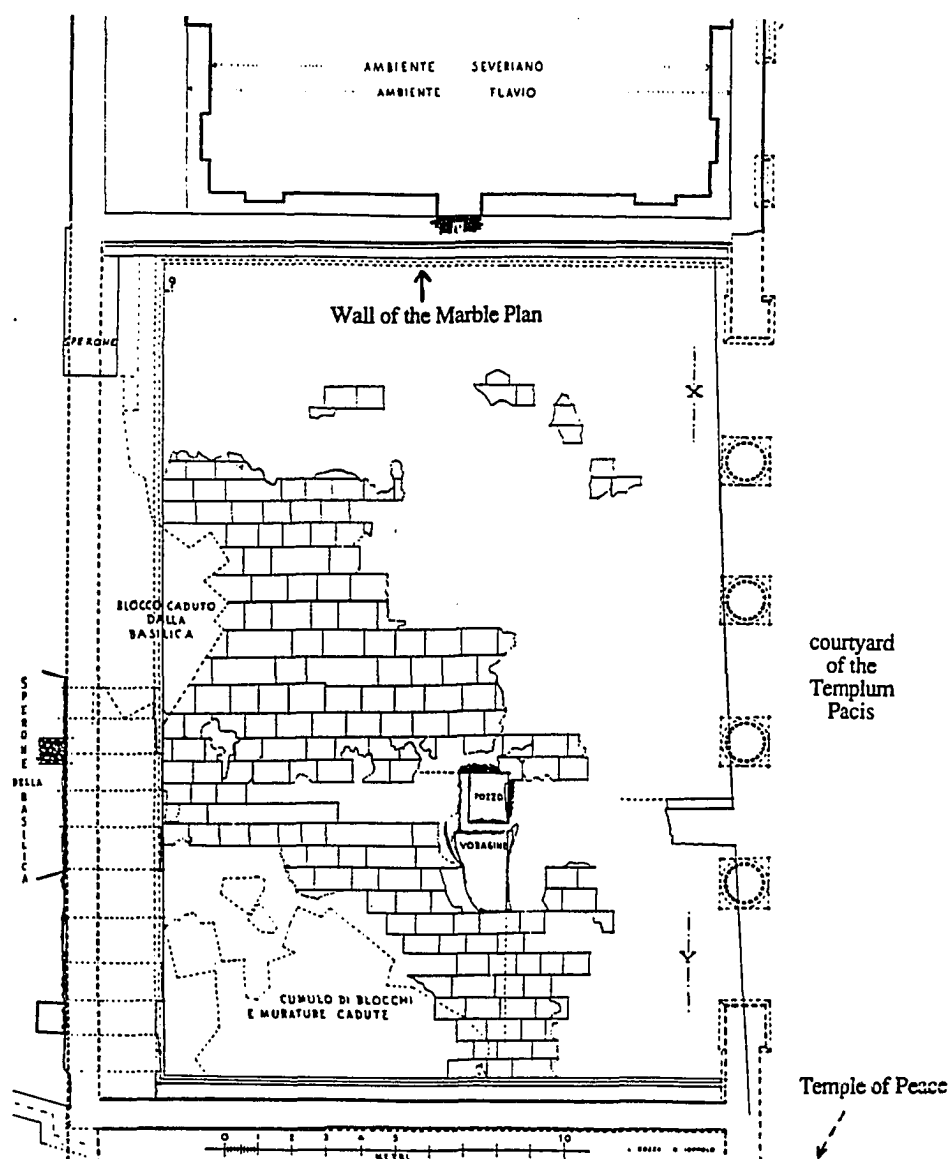


Figure 1.37. The room of the Plan. The Plan was emplaced on the wall at the top of this drawing as indicated. The room extending beyond the top of the figure shows niches which may have been library book cupboards. (*PM*, p. 192)

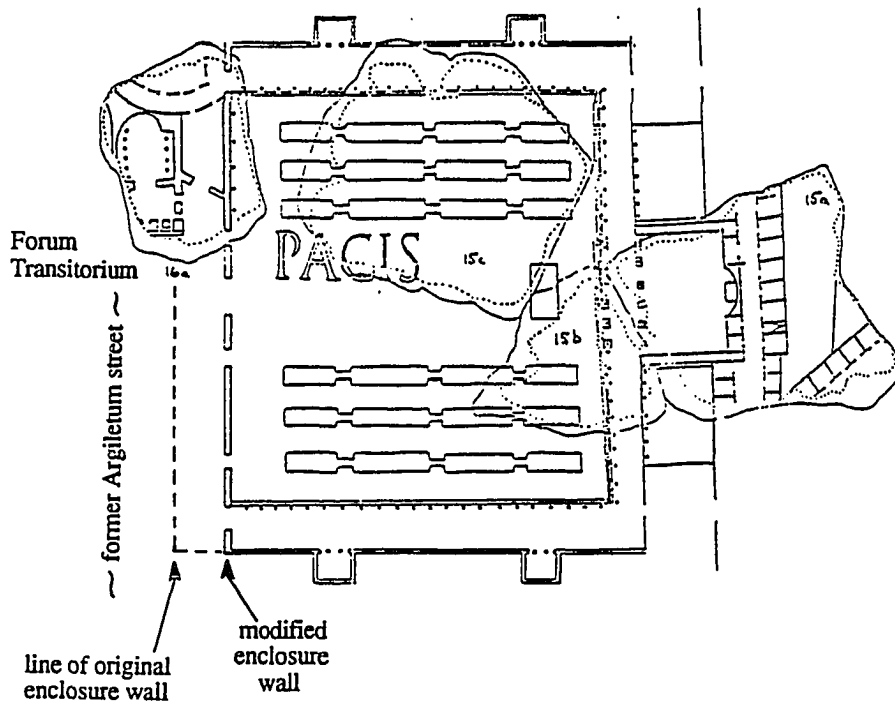


Figure 1.38. Modification of the original Templum Pacis. Domitian widened the through-way called the Argiletum to make more room for the Forum Transitorium. The new forum annexed some of the space previously occupied by the Templum Pacis. A new boundary wall for the Templum Pacis was set farther back into the courtyard of the enclosure. (Modified from Anderson 1982, Ill. 1)

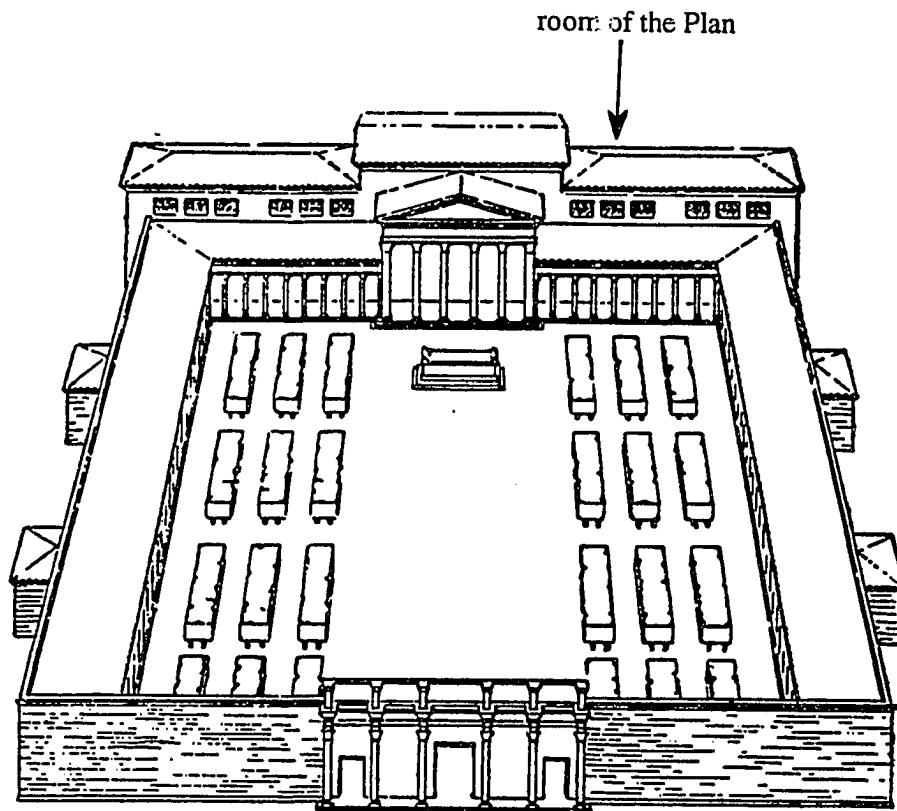


Figure 1.39. Reconstruction of the Templum Pacis, location of the Marble Plan. (Gismondi, 1937; from *PM*, p. 195)

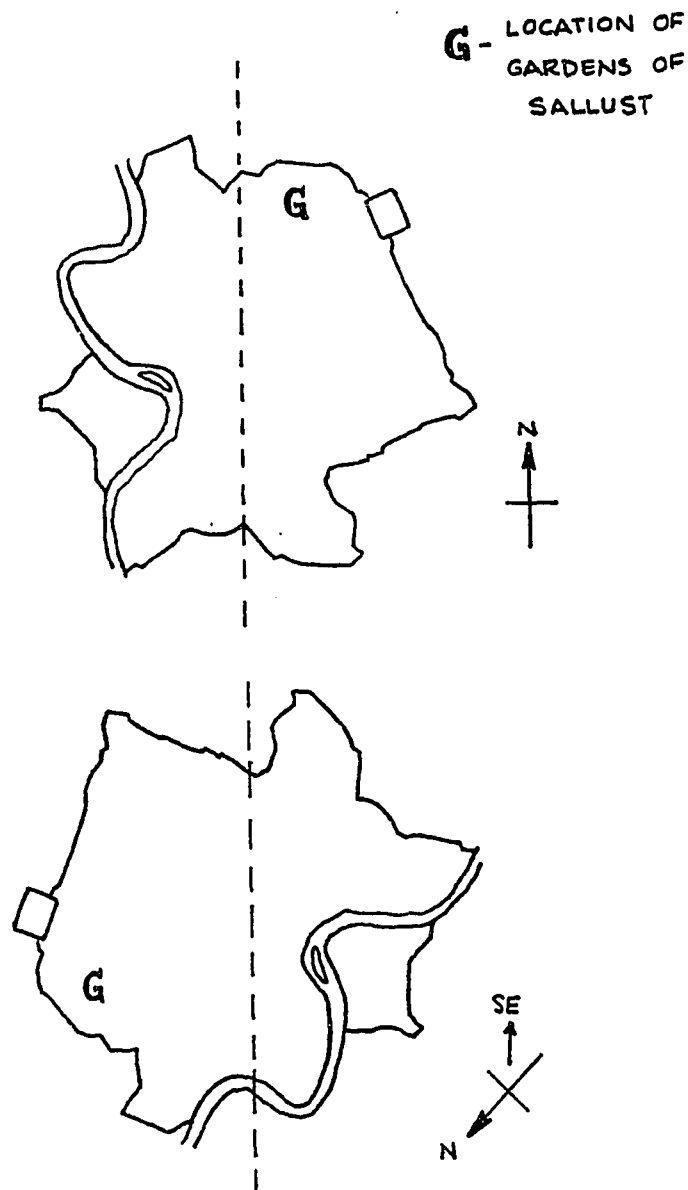


Figure 1.40. Tacitus describes the Gardens of Sallust as “on the left side of the city.” According to a north-at-the-top orientation, they are on the right side of the city. With a southeast-at-the-top orientation, like that of the Marble Plan, the gardens are as Tacitus describes them. Tacitus’ comment has been taken to attest the existence of an earlier Marble Plan in his day, but since the southeast orientation for geographical discussion of Rome was traditional, it is not clear whether his remark refers to a well-known map or simply to common conception.

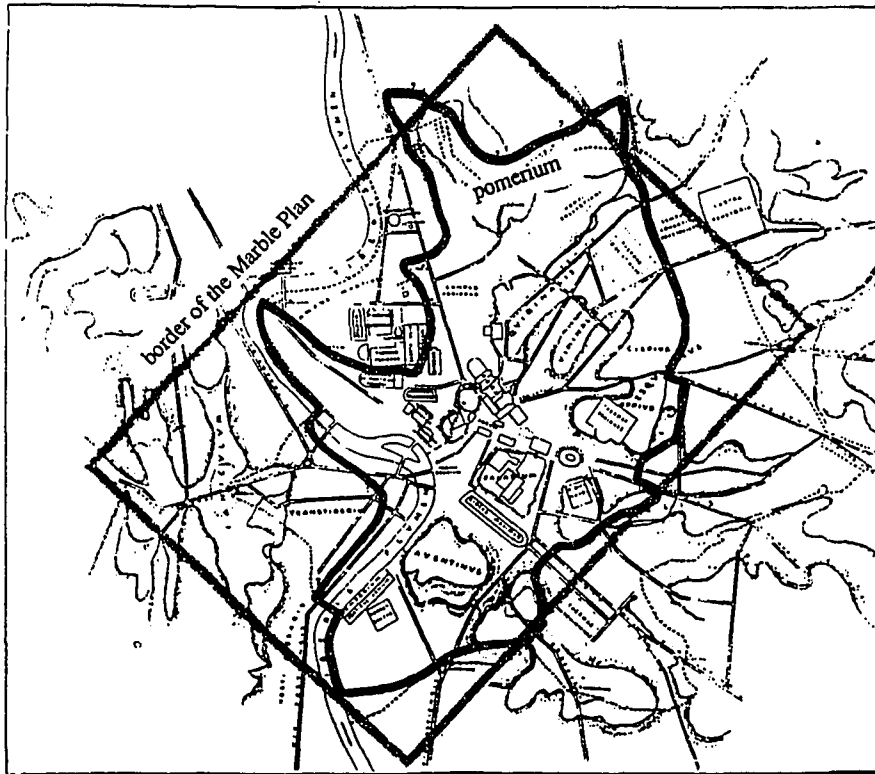


Figure 1.41. The scope of the Marble Plan accommodates nearly all of Rome within the *pomerium*, or sacred boundary of the city. (Modified from *PM*, p. 232)

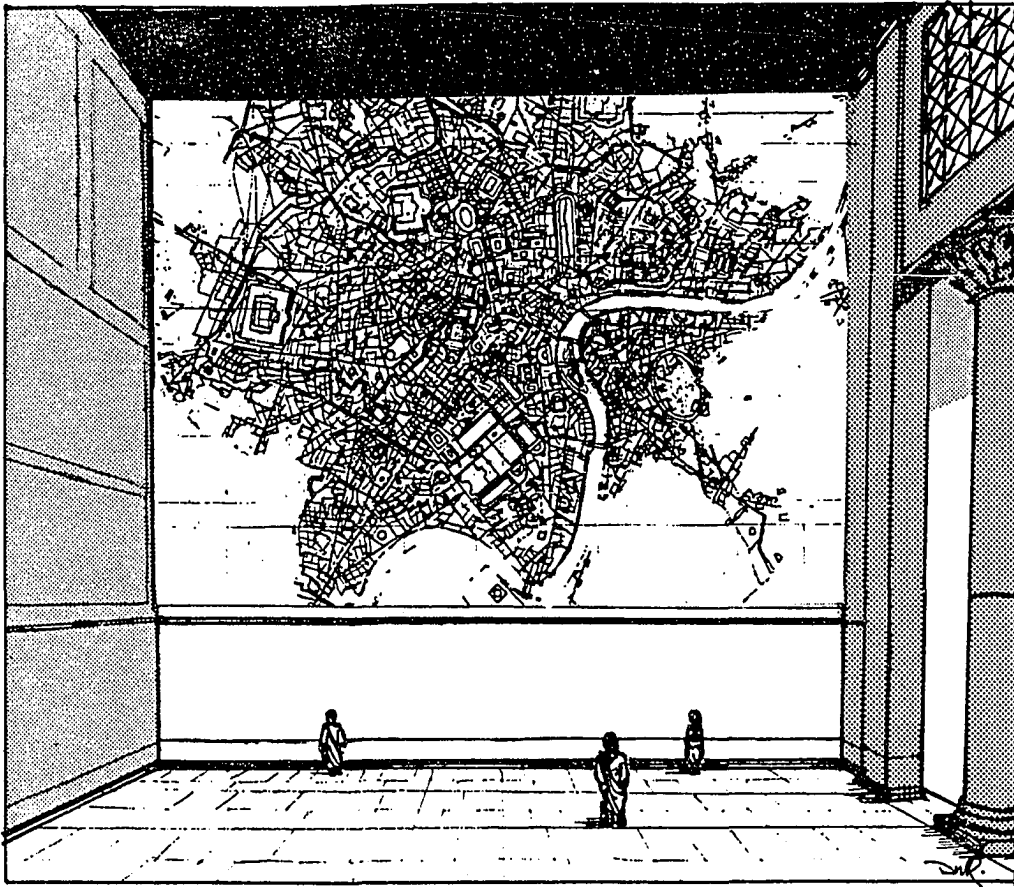


Figure 2.1. Sketch reconstruction of the Plan in its original architectural setting in the Templum Pacis complex. Its spectacular size is often underappreciated. The furnishings of the room are unknown, so this drawing represents the room just after the Plan was completed, and before the furnishings were installed.

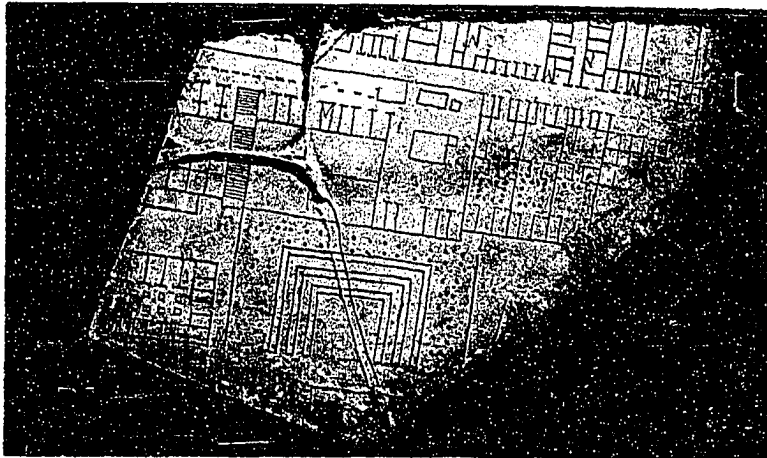


Figure 2.2 The engraved lines of the Plan were filled with minium, the bright red-orange paint commonly used by the Romans for enhanced readability of inscriptions. (Moatti 1993, p.43)

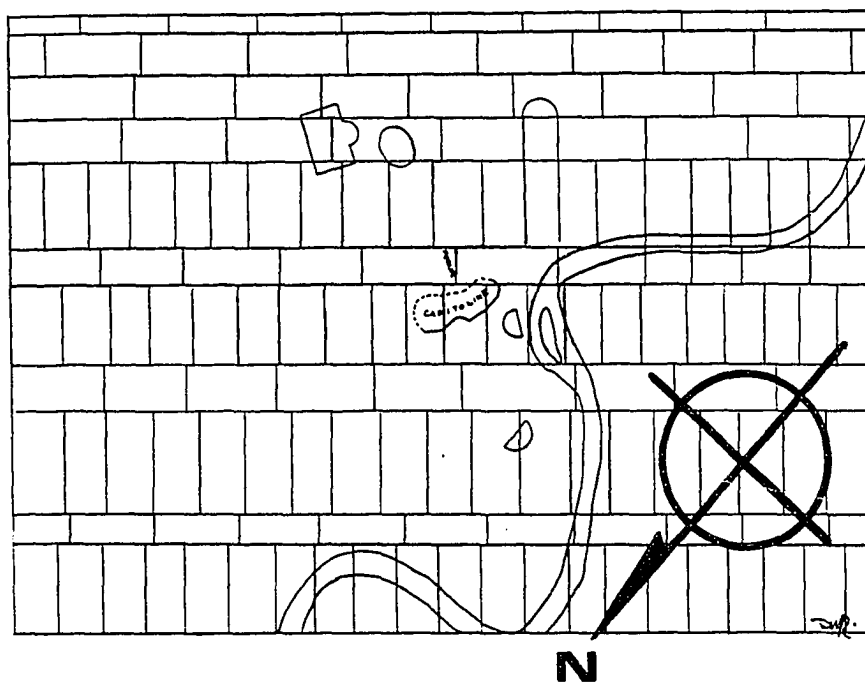


Figure 2.3 The Marble Plan was oriented with southeast at the top, apparently a traditional orientation for mapping the city of Rome.

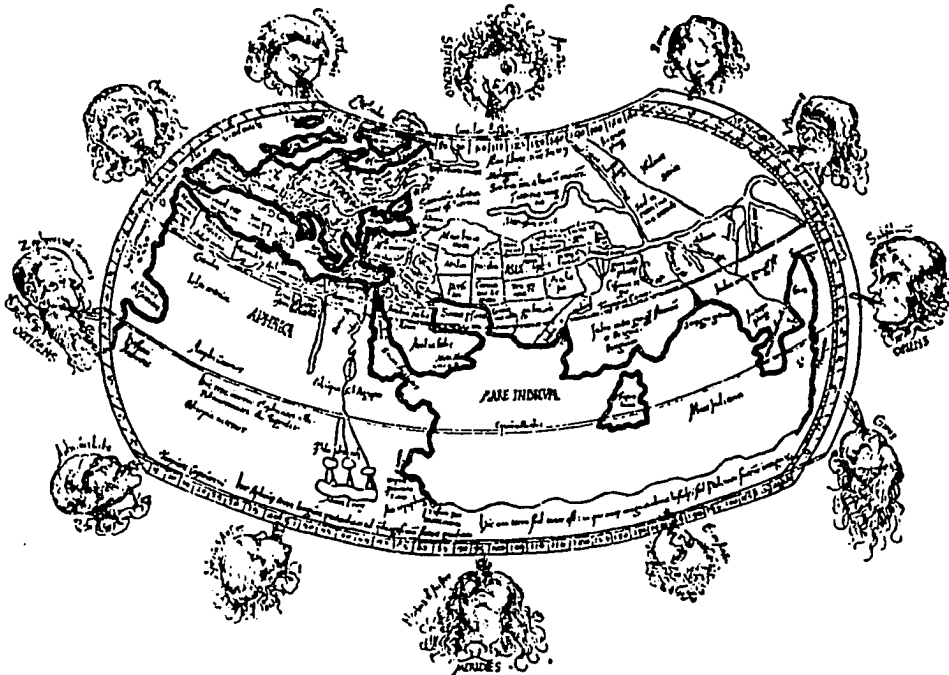


Figure 2.4 The world map of the Greek geographer Claudius Ptolemy is oriented with north at the top, a traditional alignment for Greek maps. (Modified from Ptolemy, *The Geography*, Dover edition p. 164)

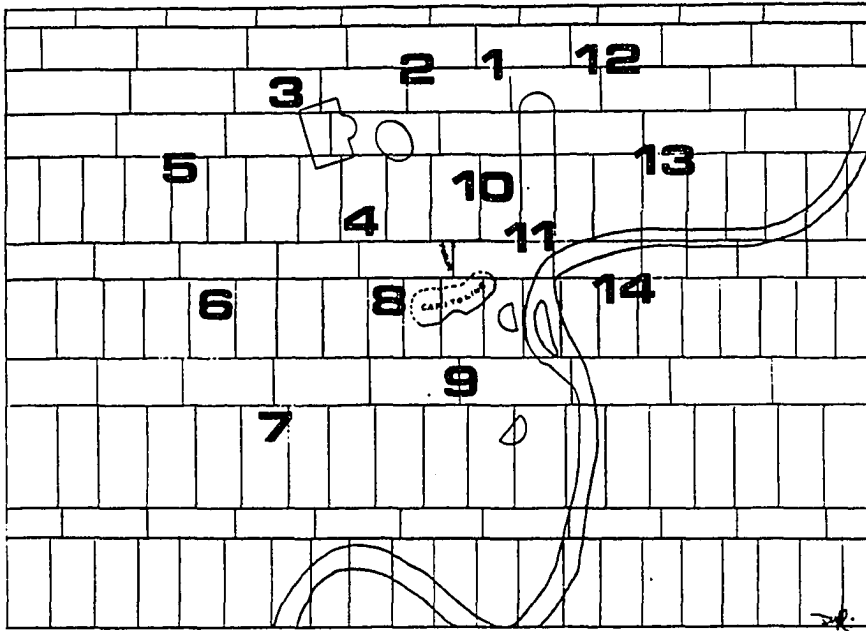


Figure 2.5 The layout of the fourteen Augustan *regiones*, or city wards, appears to support a traditional southeast orientation for the mapping of the city of Rome. Plotted on the Marble Plan, here, the first ward appears at the top of the map, to the southeast.



Figure 2.6 This map of the city of Rome from the twelfth century A.D. presents southeast at the top of the map. This demonstrates the existence and long survival of a tradition for orienting maps of Rome with southeast at the top. (Harvey 1980, fig. 36)

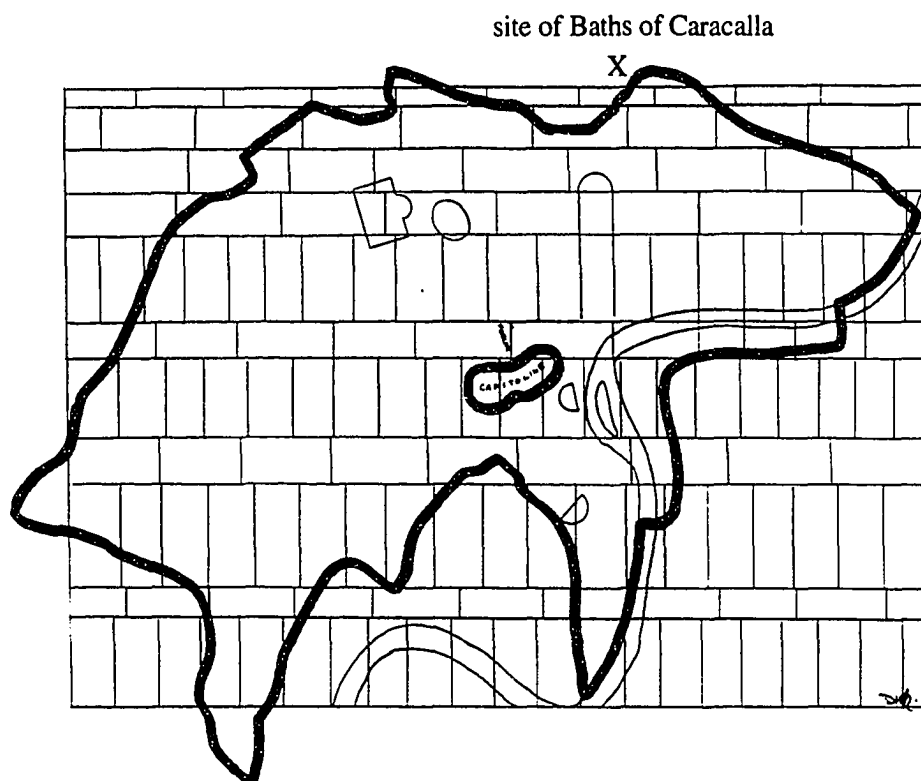


Figure 2.7 The Forma Urbis was centered on the Capitoline hill, traditional heart of Rome, and the scope of the Plan was defined by the *pomerium* (ceremonial boundary of the city--marked in bold line). This symbolic definition meant that some important developed areas of the city were excluded from the Plan, including the site where the colossal Baths of Caracalla would be built just after the Plan was completed.

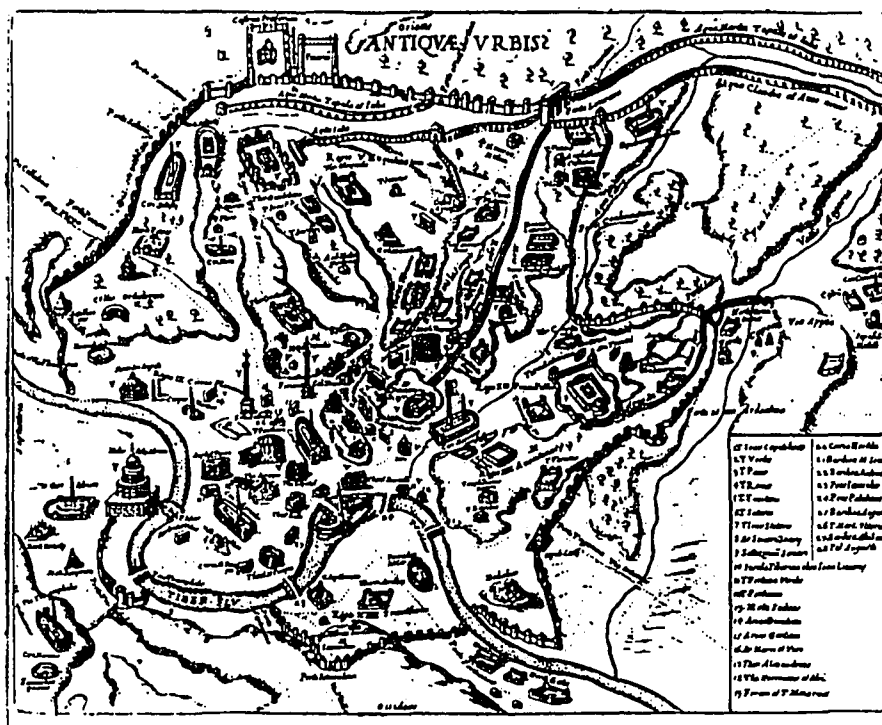


Figure 2.8. Bellori's map of Ancient Rome (1672) is topographical in its projection, but includes many aspects from the 'picture map' tradition, such as the buildings rendered as illustrations. There was a long break between the third-century *Forma Urbis* and the eighteenth-century Nolli Plan of Rome, during which the only maps of all of Rome were picture-maps of various kinds, rather than true topographic maps.

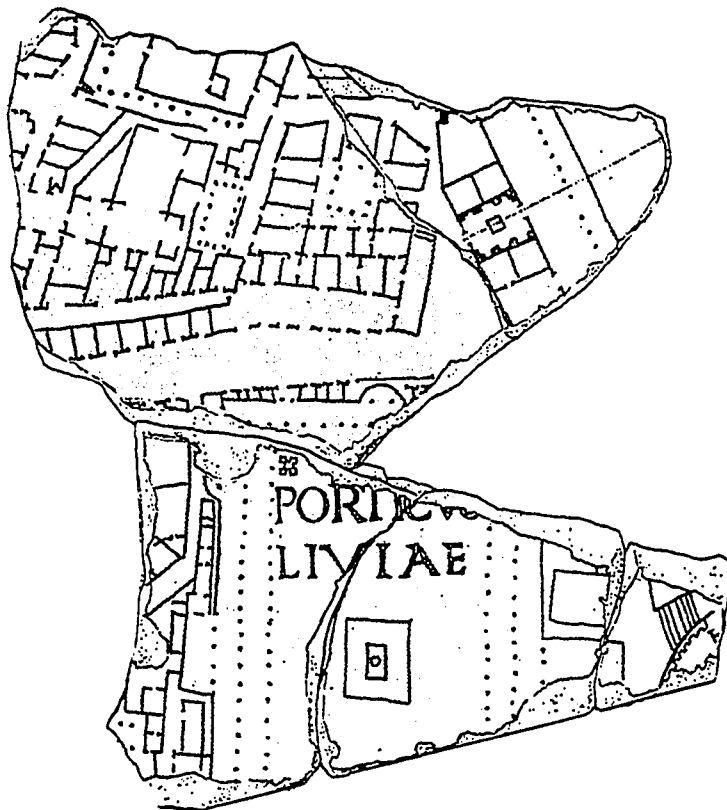
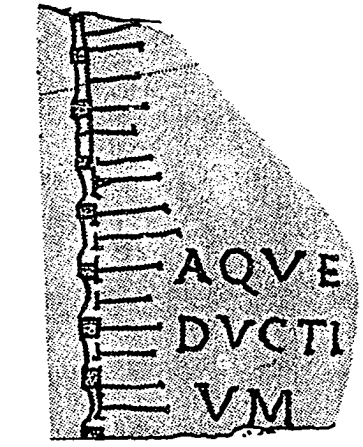
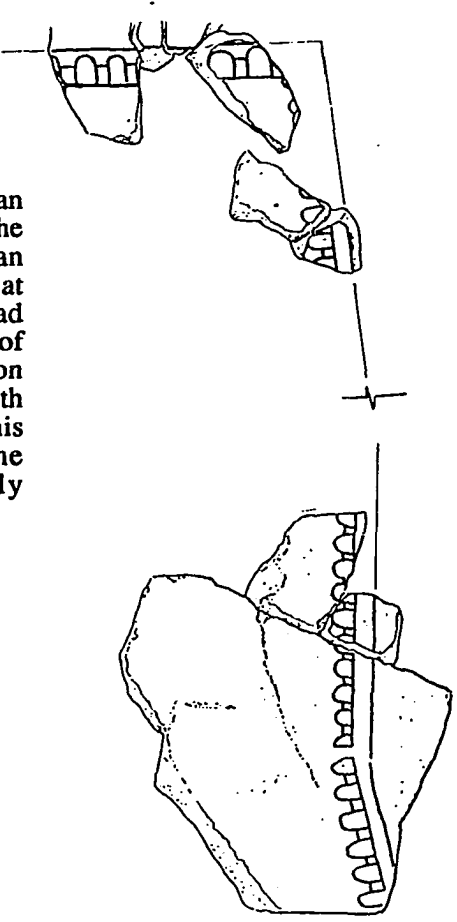


Figure 2.9. The Marble Plan depicts both prominent public monuments (such as the Porticus Liviae, shown here) and the warren of anonymous domestic and commercial architecture that filled the city. (FUM)

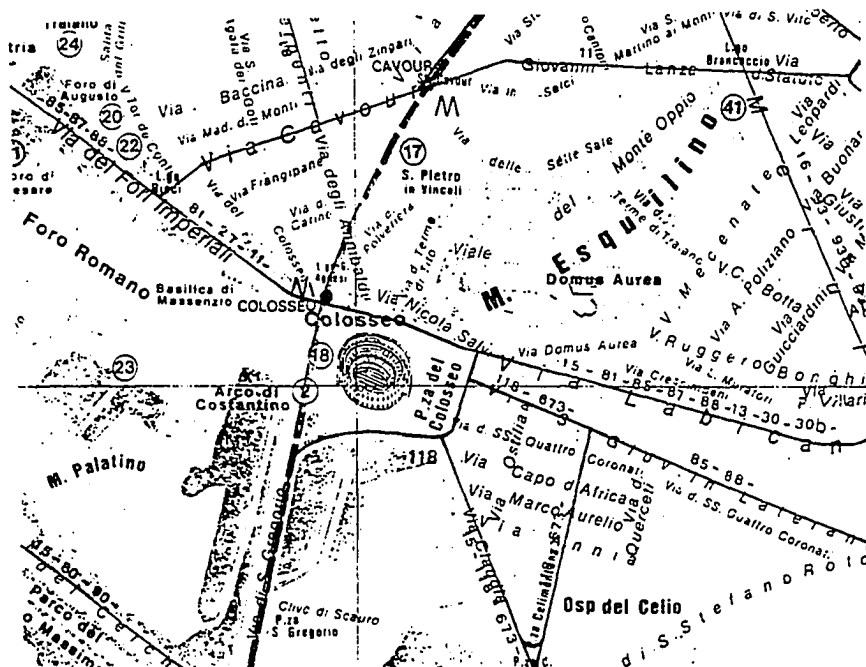
Figure 2.10. The Marble Plan depiction of the course of the Alsietina aqueduct shows an illustrative, elevation view at variance from the overhead perspective seen in the rest of the Plan. This convention may have been adopted both to fill the empty space in this area, and to make the aqueduct more readily recognizable. (FUM)



The section of the Claudian aqueduct shown above is depicted with standard Plan conventions (overhead perspective with the arch piers in outline), and is much less recognizable to the average viewer than the convention for the part of the Alsietina aqueduct shown at left. (FUM)



Figure 2.11. The Colosseum is often shown in elevation on modern topographic tourist maps of Rome, sometimes in exaggerated scale as well. These maps are meant to be immediately readable to a broad audience, providing emphasized representations of prominent landmarks to aid in the map user's orientation. Similar practices are also seen in the Forma Urbis, suggesting that it too was meant to be accessible to a broad audience rather than only to specialists. (Ente Provinciale Per Il Turismo [1988] Roma, E.P.T.: Rome)



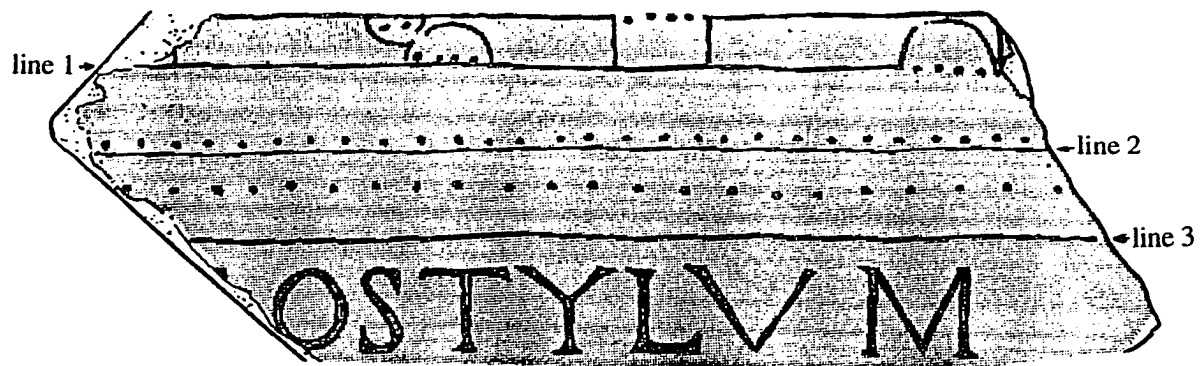


Figure 2.12. The Hecatostylum on the Plan (f. 39a). While line 1 represents a wall (the back of the portico), line 2 represents a step up, and line 3 is most probably a roof line. It is important to understand the various meanings lines can carry on the Plan, and this example demonstrates the need for contextual interpretation. (FUM)

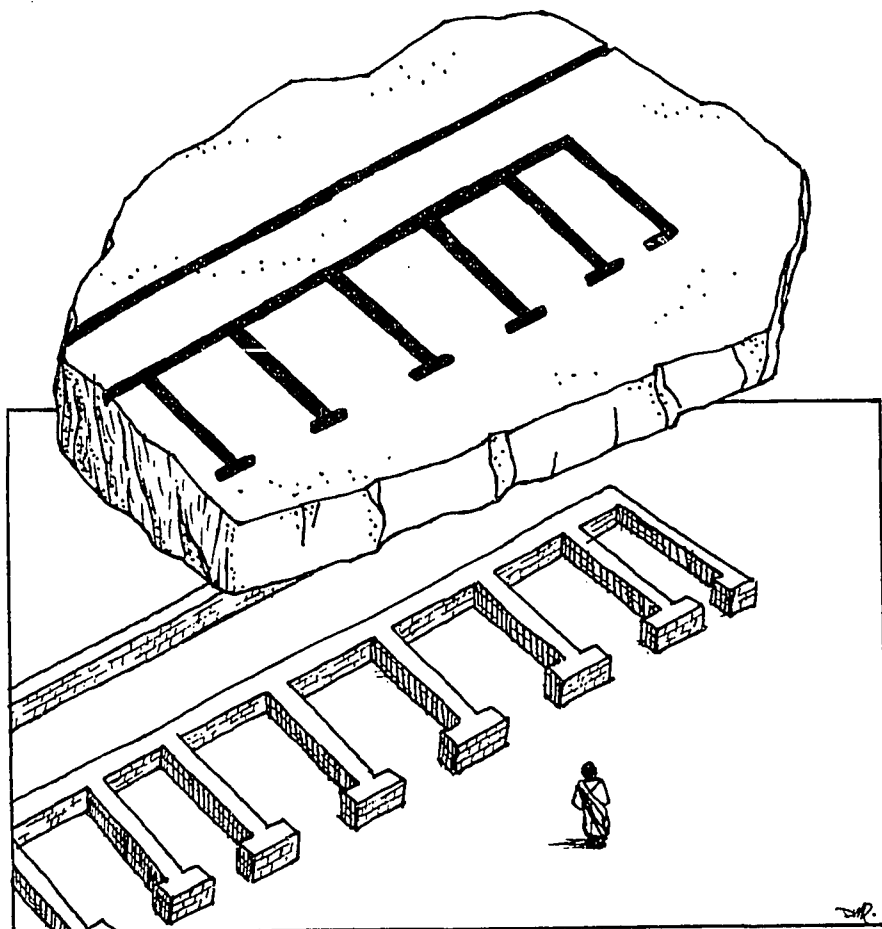


Figure 2.13. Mass Lines. In the default convention on the Marble Plan, a single line represents the mass of a wall; doorways are left blank. Most of the lines on the Plan are mass lines, but this simplified convention is rarely found on other Roman plans.

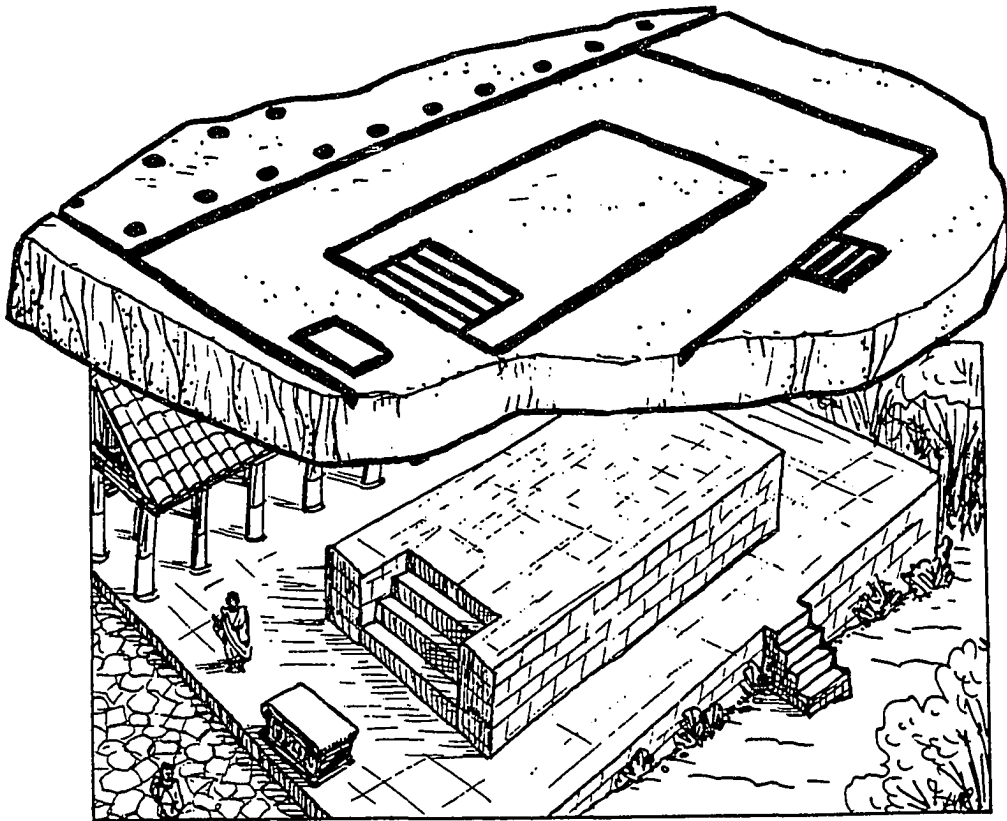


Figure 2.14. Edge lines. This drawing illustrates the derivation of several kinds of edge lines, including those that define platforms, podia, stairs, altars, and rooflines. These lines must be distinguished from mass lines by context: here for example, the small flight of stairs at the side of the platform suggests that the line which they adjoin on the Plan fragment is an edge rather than a wall; the roofline is distinguished from a wall line by the close placement of columns next to it.

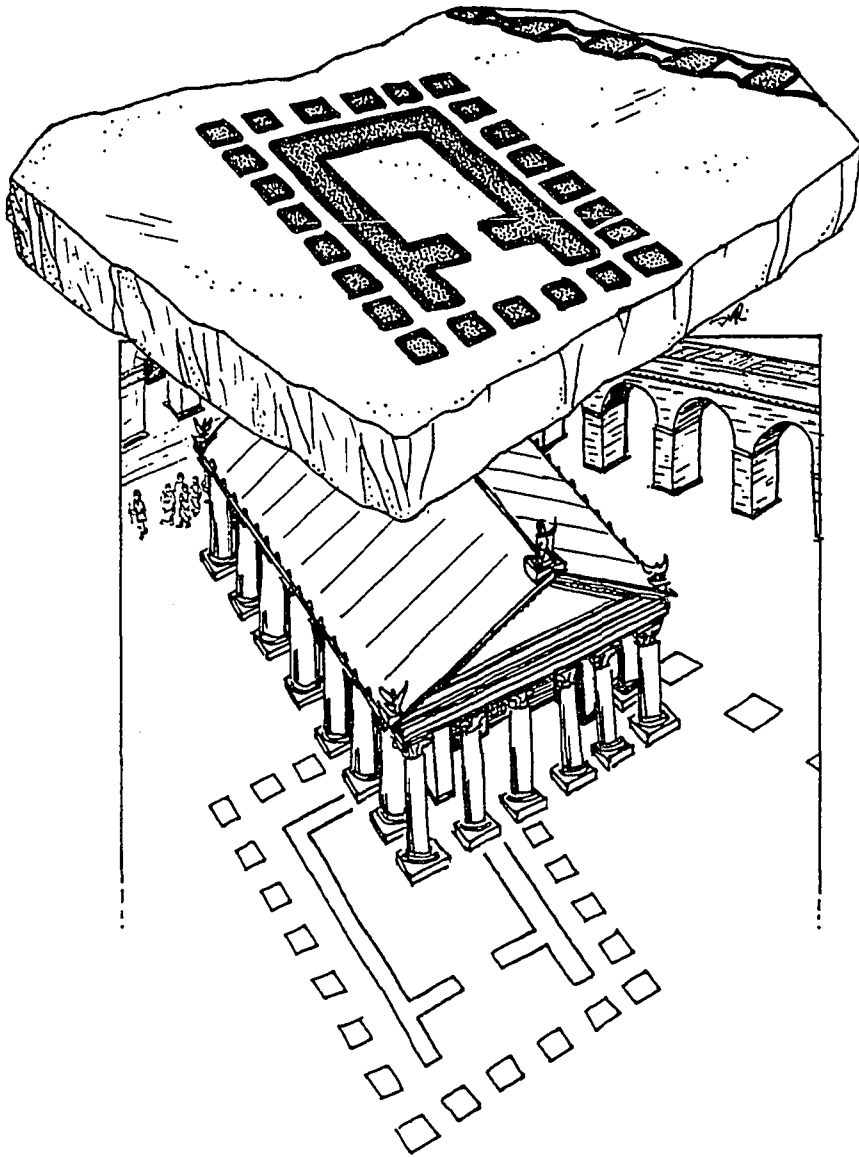


Figure 2.15. Outlines. The "footprint" of a structure of special significance is traced with an outline, and the area within this outline is often recessed--and colored--on the Marble Plan. The buildings afforded this prominence are, almost exclusively, temples. Some other structures which may get the emphasis of outline are aqueducts, theater stage buildings, and at least one major warehouse. While outline is uncommon and carries special emphasis on the Forma Urbis, it was the normal convention on other Roman architectural plans.

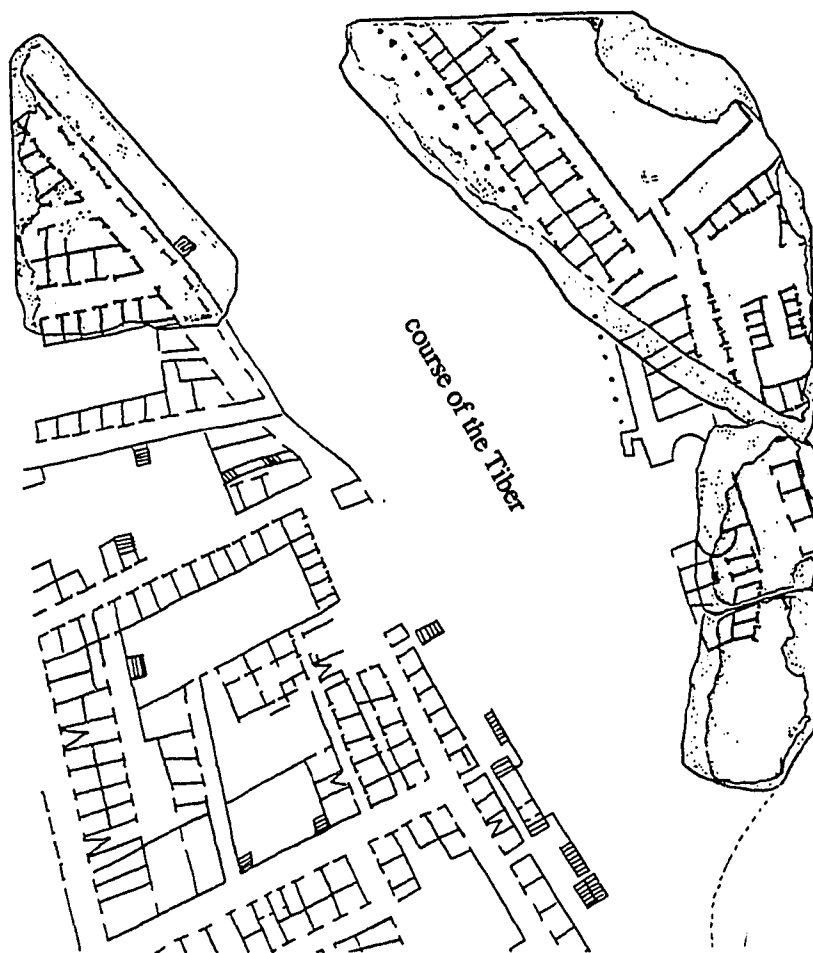
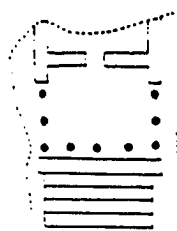
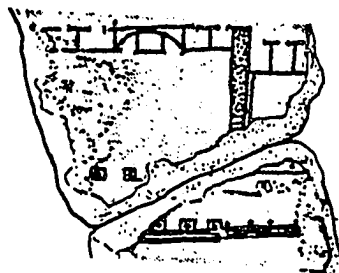


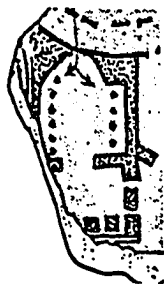
Figure 2.16. The course of the Tiber is not indicated on the Marble Plan except by the absence of architecture. Features of terrain, vegetation outside of formal gardens, and administrative boundaries are all completely absent from the Plan. (FUM)



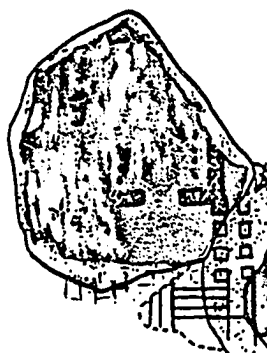
f. 5 Temple of Divine Claudius



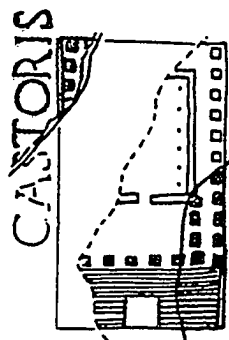
f. 15ab Temple of Peace
in the Templum Pacis



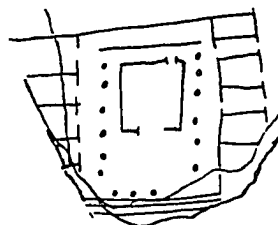
f.16a Temple of Minerva
in the Forum Transitorium



f.16bc Temple of Mars Ultor
in the Forum of Augustus

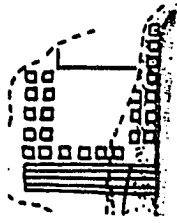


f. 18a-c Temple of Castor
in the Roman Forum

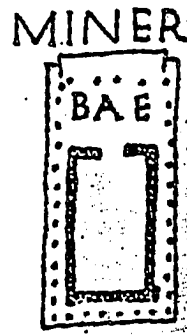


f. 21 Temple near the Balneum Surae

Figure 2.17. Temples on the Marble Plan (FUM)



f. 22a unknown temple



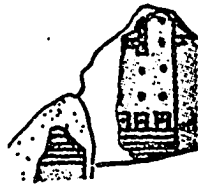
f. 22b Temple of Minerva



f. 31a-c.1 unknown temple



f. 31a-c.2 unknown temple



f. 31d Temple of Bellona



f. 31f-g unknown temple

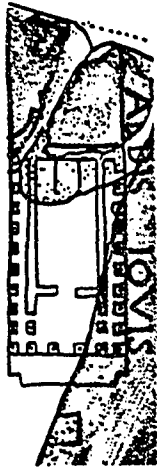


f. 31h unknown temple



f. 31i unknown temple

Figure 2.18. Temples on the Marble Plan (FUM)



f. 31u-z Temple of Jupiter Stator
in the Porticus Octaviae



f. 31bb Temple of Juno Regina
in the Porticus Octaviae



f. 32 unknown structure
near Tiber island



f. 35ee Temple of the Nymphs

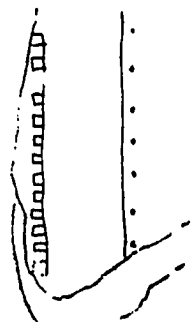


f. 35 f-g Shrine in the Divorum



f. 35 h-m Shrine in the Divorum

Figure 2.19. Temples on the Marble Plan (FUM)



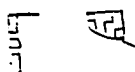
f. 36b Temple of Matidia?



f. 37.1 Temple A in the Area Sacra di Largo Argentina



f. 37.2 Temple B in the Area Sacra di Largo Argentina



f. 37.3 Temple C in the Area Sacra di Largo Argentina



f. 103 unknown temple



f. 230 unknown temple



f. 234b unknown temple



f. 234c unknown temple



f. 237 unknown temple

Figure 2.20. Temples on the Marble Plan (FUM)

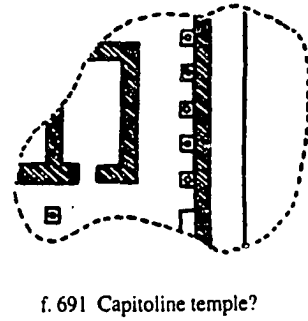
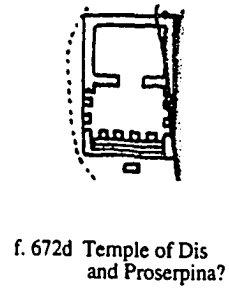
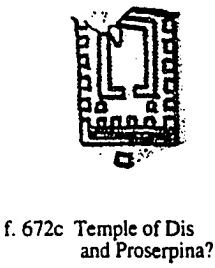
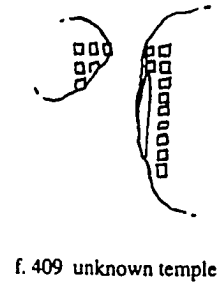
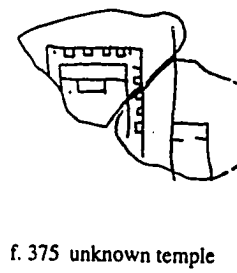
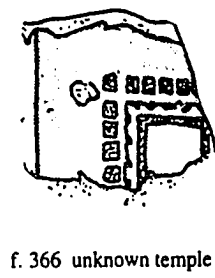
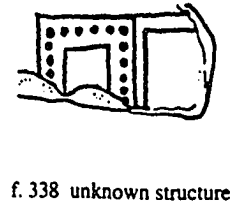
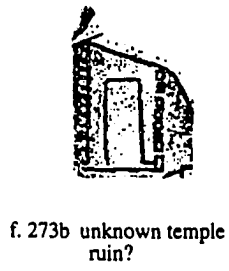
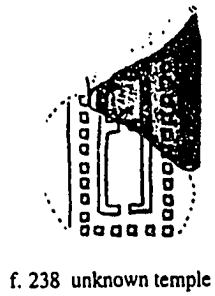
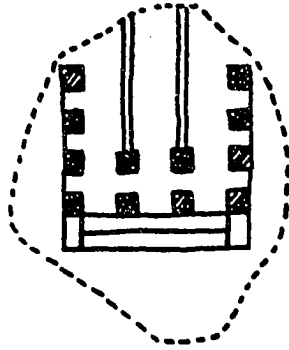


Figure 2.21. Temples on the Marble Plan (FUM)



f. 694 unknown temple

Figure 2.22. Temples on the Marble Plan (FUM)

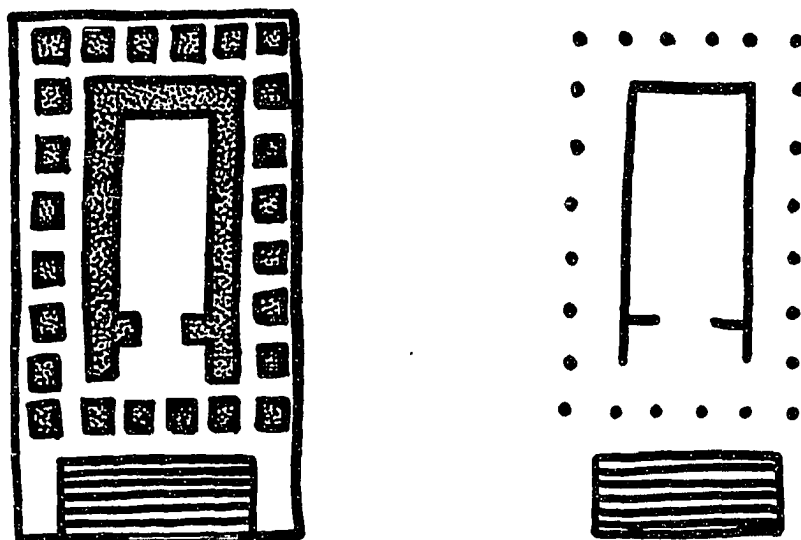


Figure 2.23. Special conventions for emphasis. At left, an 'ideal' temple on the Marble Plan is distinguished by the use of an edge line delimiting the podium, and outlines for the columns and the cella; these outlines would be filled in with bright red paint. The illustration at right shows how the very same building would be depicted with the standard conventions employed on the Plan. The difference in emphasis is clear.

exterior column type

fragment	cella	podium	□	▣	•	none	int.	statue
	outline	edge					cols.	base
5 Claudius	X				X		?	?
15ab Pacis	X	?		X				
16a Minerva	X		X				X	
16bc Mars	X		X				X	?
18a-c Castor	X	X	X				X	?
19 -ORDIA	?	X	X					
21		?			X			
22a	?	?	X				?	?
22b Minerbae	X	X			X			
31a-c.1	X	X		X			?	X
31a-c.2	X	X		X				
31d Bellona	X	X		X	X		?	?
31fg	X	X		X				X
31h	X	X	X					?
31i	X	X	X				?	?
31u-z	X	X		X				X
31bb	X	X		X				X
32		X			X		?	?
35fg Divor.		X			X			
35h-m Divor.		X			X		X	
35ee Nymphae	X	X	X				X	?
36b Matid.	?	X	X				?	?
37.1 Largo A	X	X	X					
37.2 Largo B	X				X			
37.3 Largo C	X	X	X				?	?
103	X	X	X					?
230			X					
234b	X	X	X					?
234c	X	X				?		
237	X		X					?
238	X	X	X					
273b ruin		?	X					
338		X			X			
366	X	?	X					
391ab		X	X					X
409/414			X				?	?
672c Dis	X	X	X					
672d	X	X	X					
691	X	X		X				?
694	X	X	X					?

Figure 2.24. Occurrence of traits in temples illustrated on the Marble Plan.



Figure 2.25. The three different symbols used to represent columns on the Marble Plan.



Figure 2.26. Square column symbols can be drawn as attached to a temple podium edge line (left), or "floating" separately from it (right).

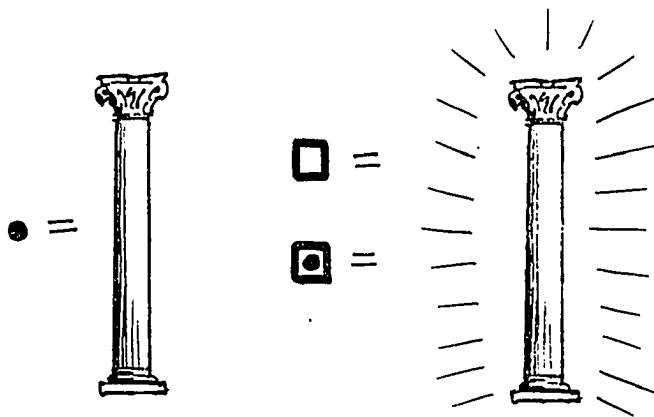


Figure 2.27 Column symbols. Each symbol, on its own, has exactly the same architectural meaning as the others. The two square forms indicate a column in a building of special significance, especially a temple; their meaning is cognitive rather than architectural. Only when one of the square forms is found together with the dot in the same building is any architectural difference between the types of columns indicated.

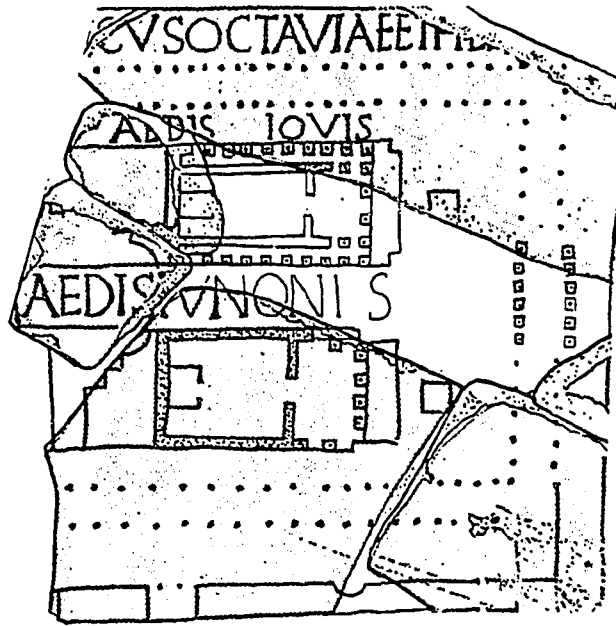


Figure 2.28 In the Porticus Octaviae, two different column symbols appear in the same monument--here, the simple dot and the dotted square. When this occurs, the different symbols carry different architectural meaning; here the difference is known to be that the dotted squares represent columns on plinths, while the dots represent columns founded directly on the stylobate. (FUM)

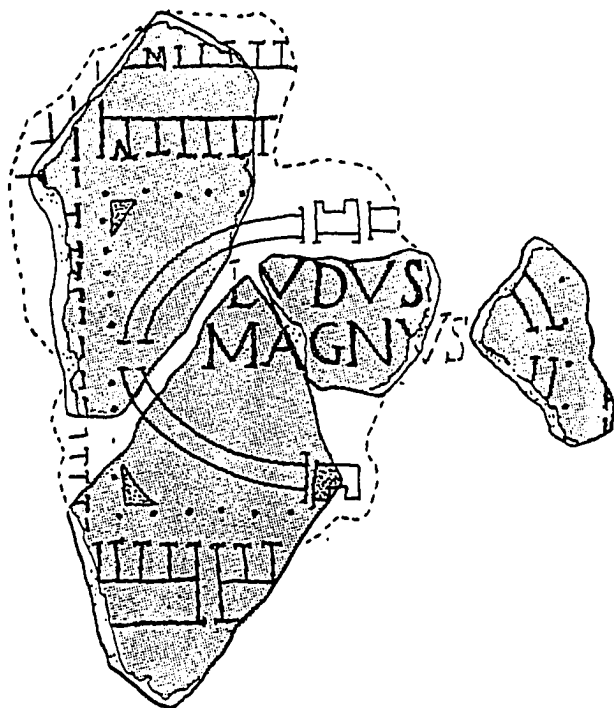


Figure 2.29 The Ludus Magnus on the Plan (FUM)

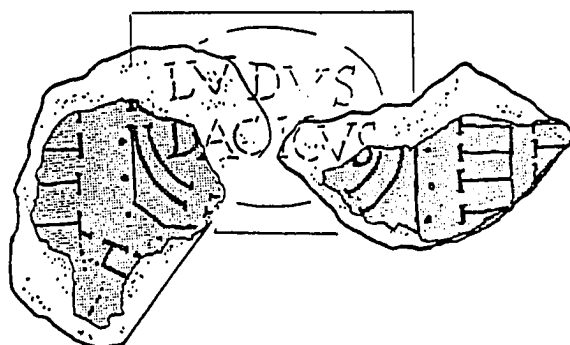


Figure 2.30 The Ludus Dacicus on the Plan (FUM)



Figure 2.31 The Colosseum (Flavian Amphitheater) on the Plan (FUM)

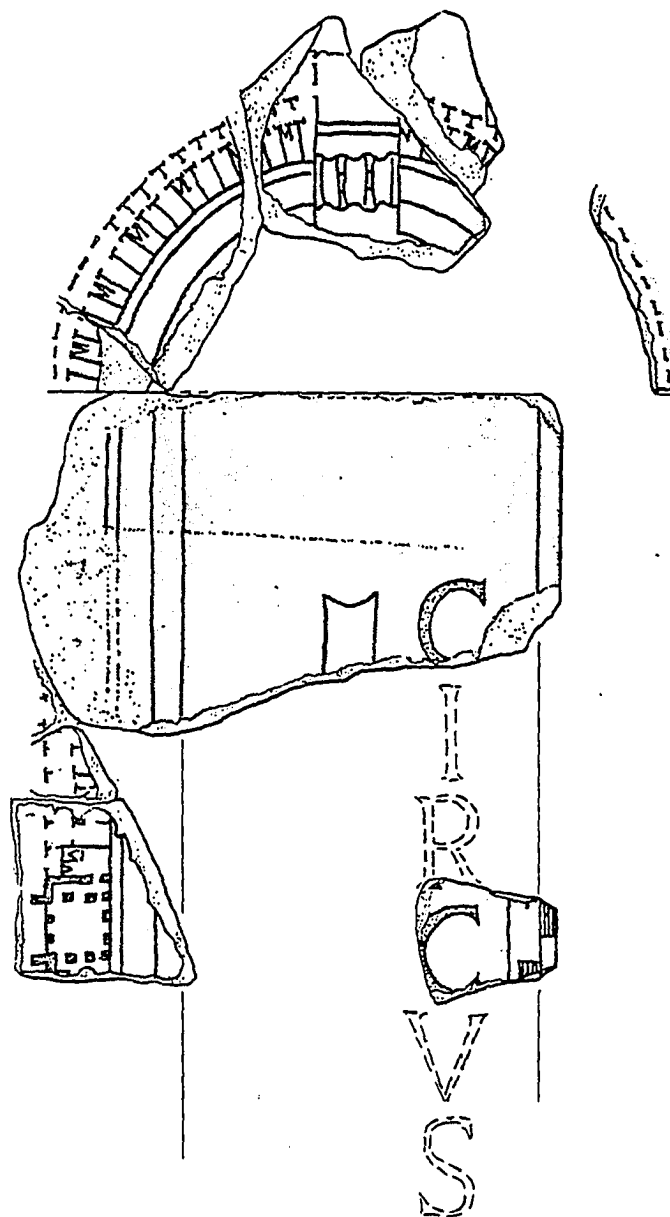


Figure 2.32 The Circus Maximus on the Plan (FUM)

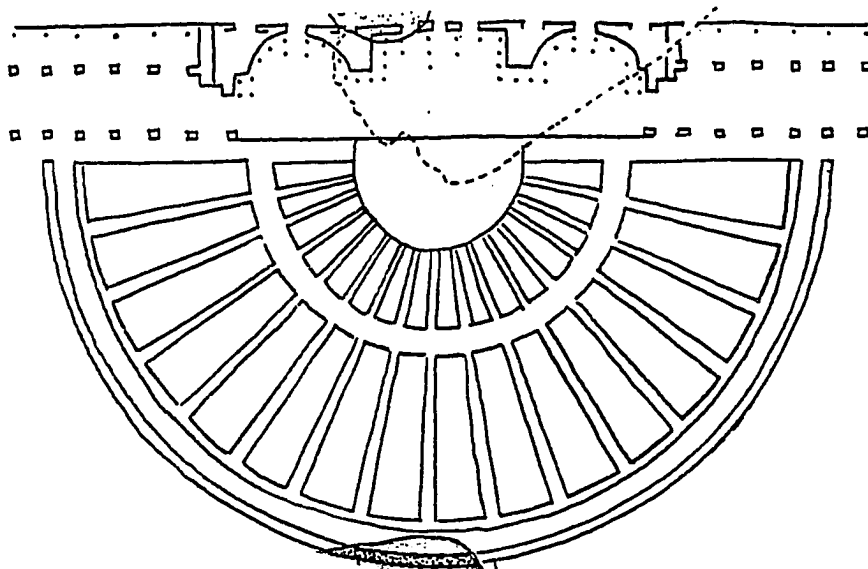


Figure 2.33 The Theater of Pompey on the Plan (FUM)

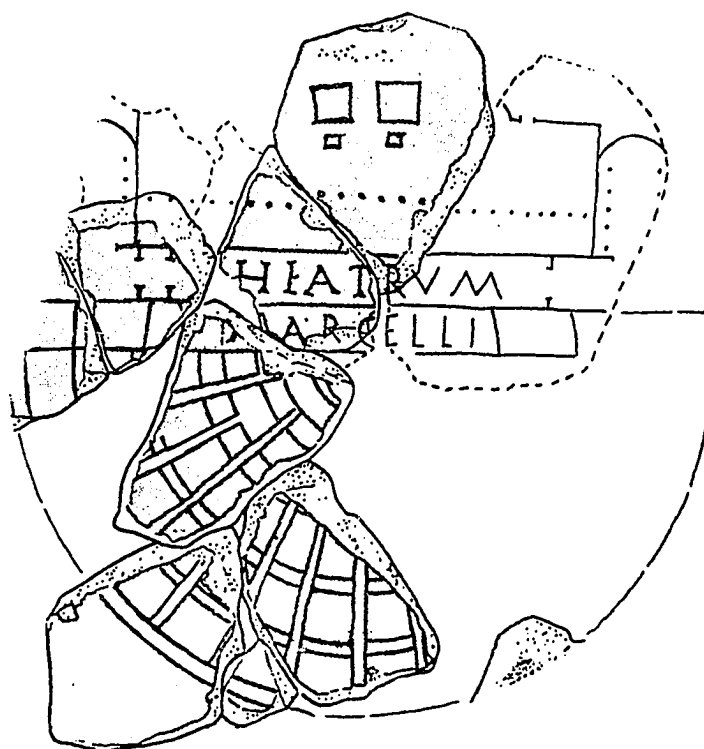


Figure 2.34 The Theater of Marcellus on the Plan (FUM)

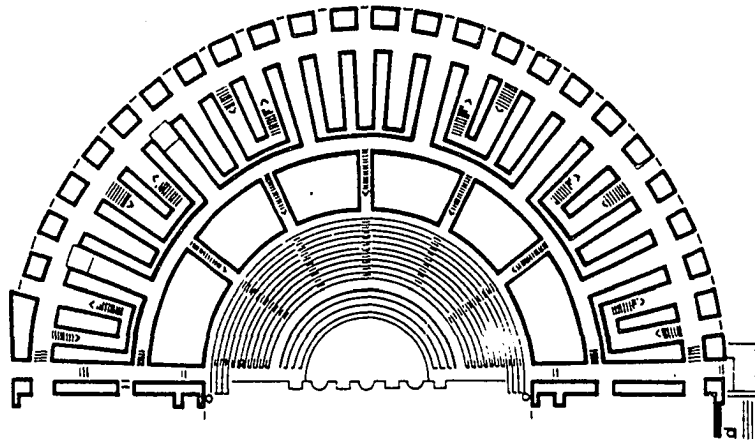


Figure 2.35. Modern representation of an ancient Roman theater (at Sabratha). The combination of aerial view for the lower seating and a section view showing the substructures beneath the upper seating compares to the mixing of these two perspectives on the Marble Plan, as seen in the Plan image of the Circus Maximus (Fig. 2.32). (Picard, 1965, p. 171)

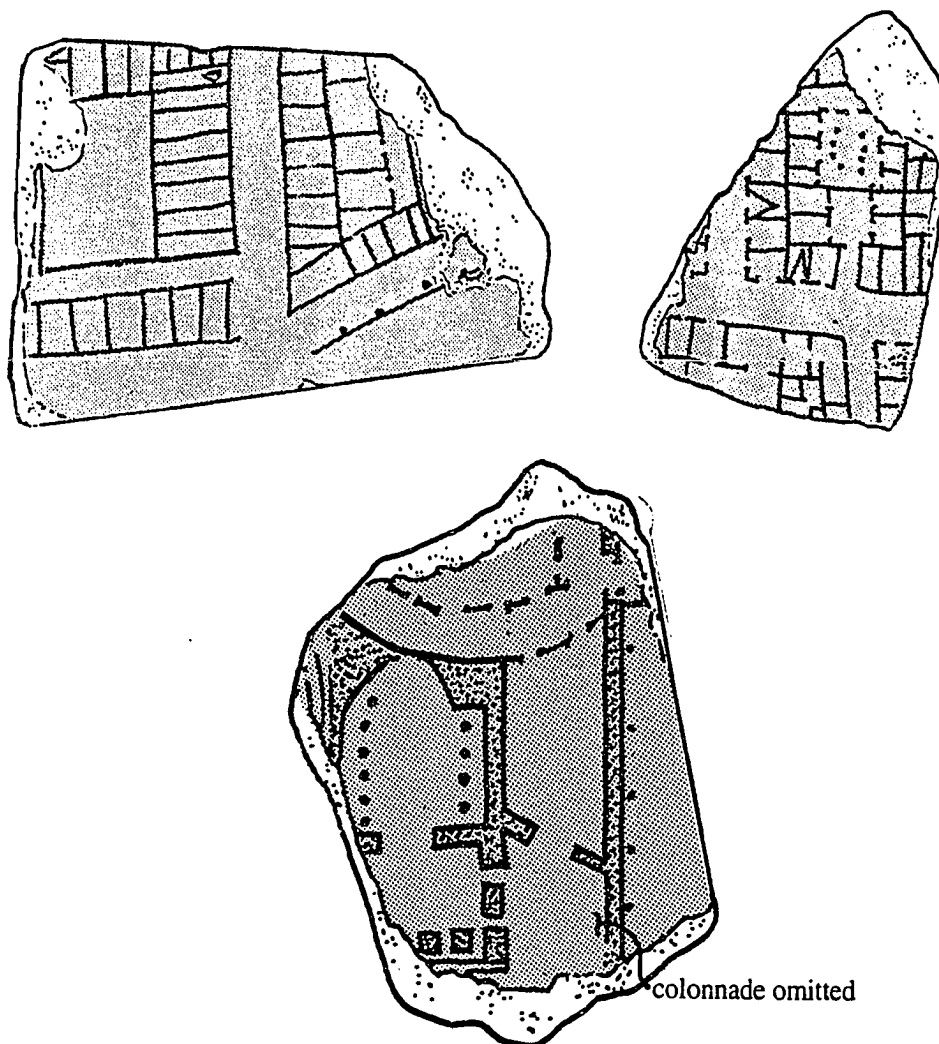


Figure 2.36 Omission errors. At top left, f. 602 presents rooms hastily executed, lacking doorways. At top right, f. 484 depicts a house in which doorways are omitted for some rooms. Directly above, the Plan representation of the Forum Transitorium omits the famous attached colonnade that ran along the inside of the Forum wall. (FUM)

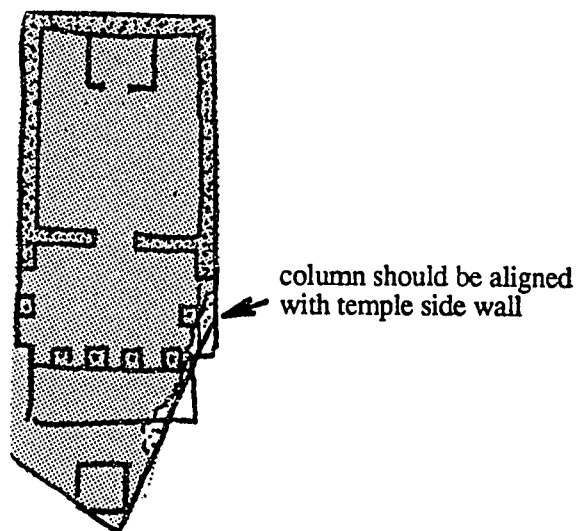


Figure 2.37 Misplacement error. In the Plan image of the Temple of Juno Regina in the Porticus Octaviae, one of the columns is displaced through engraver carelessness. (FUM)

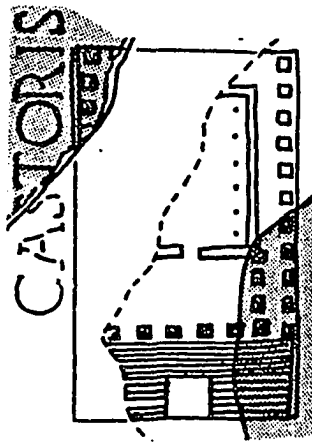


Figure 2.38. Discrepancy error. The Plan depicts the famous Temple of Castor in the Roman Forum (fr. 18ac) in a fashion that cannot be reconciled with the known remains or literary descriptions of the temple. Such errors are rare on the Plan. (*FUM*)

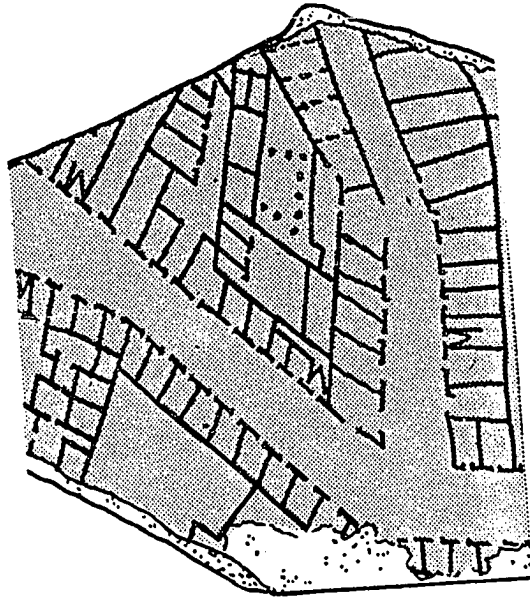


Figure 2.39 Skewing error. (FUM)

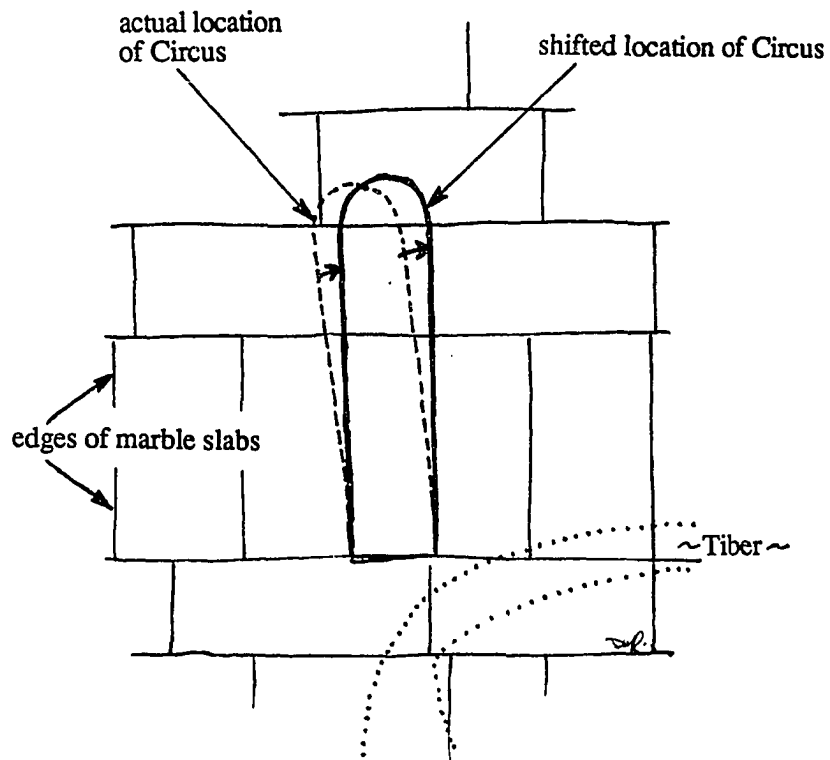


Figure 2.40. The Circus Maximus was shifted slightly from its proper place on the Plan so that its long sides would align with the borders of the marble slabs it was engraved on, rather than crossing the seams at a shallow angle.

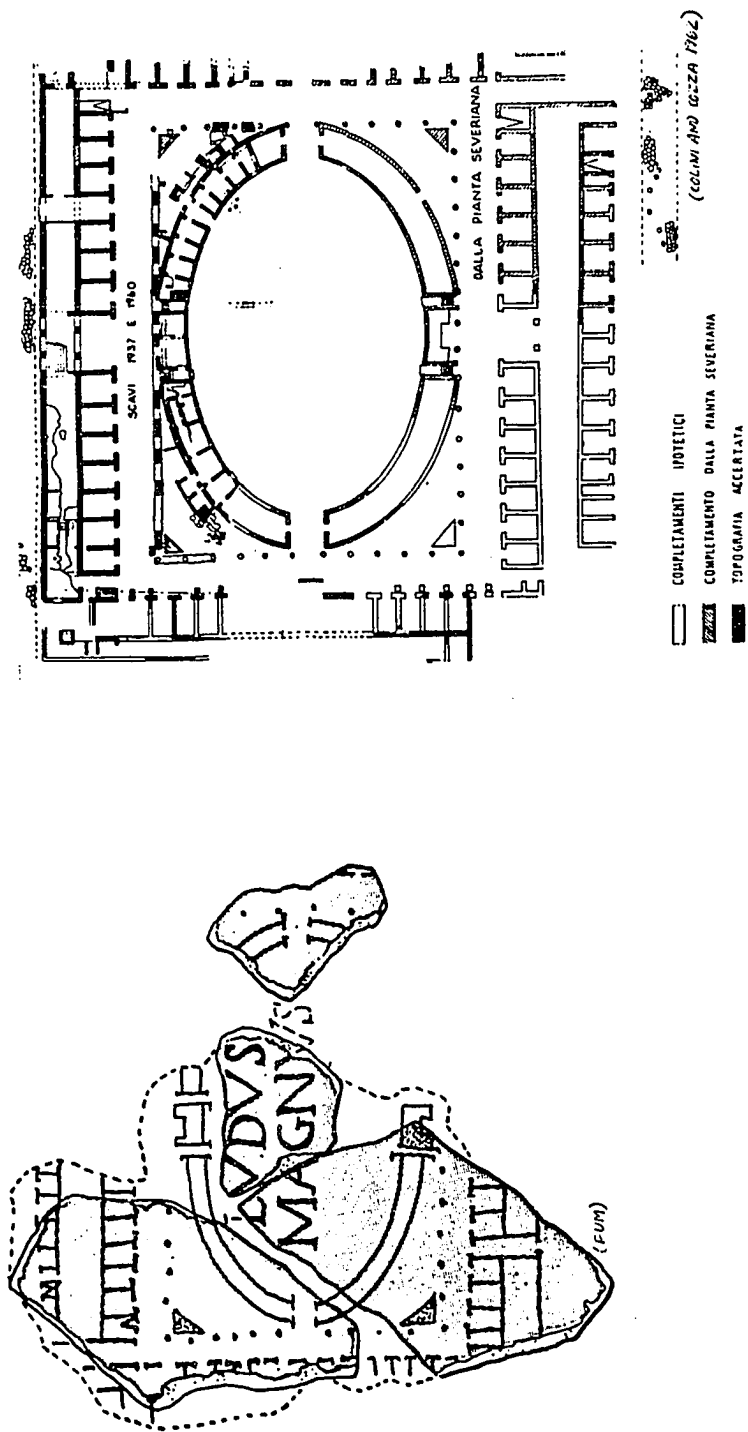


Figure 2.41 The Plan representation of the Ludus Magnus compares well with evidence from archaeology.

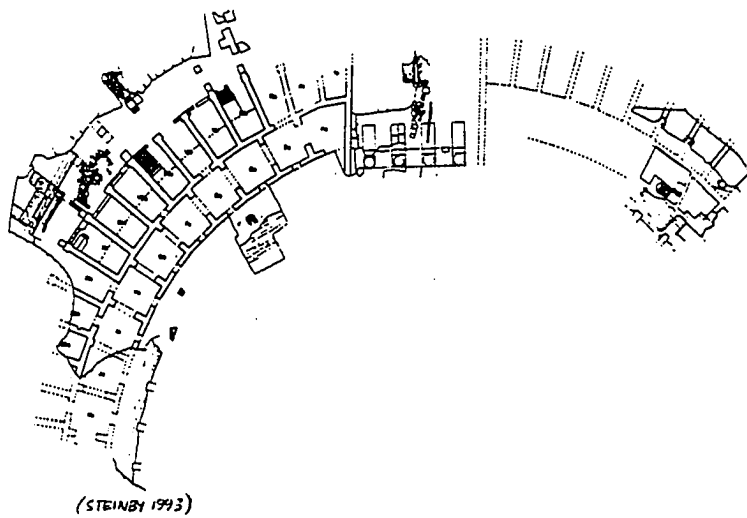
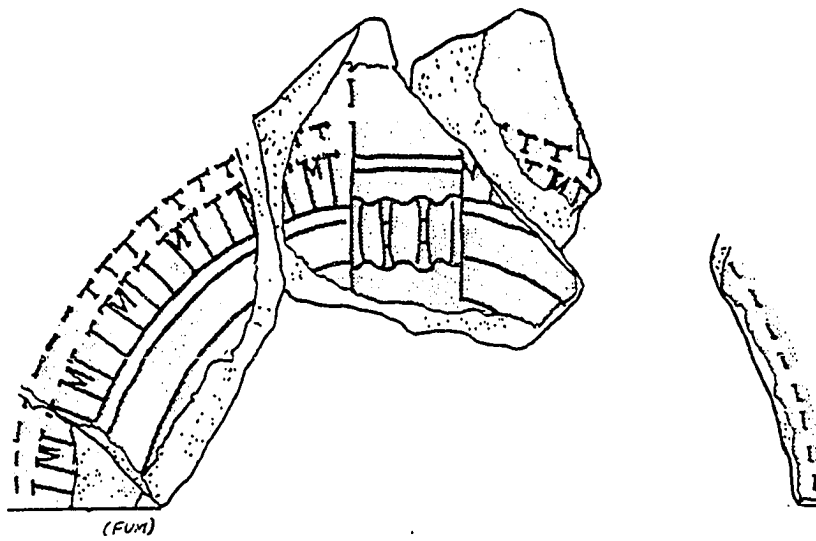


Figure 2.42 Archaeology accords with the Plan details of the Circus Maximus spendone, even to the placement of the stairs within certain rooms (V symbols on the Plan).

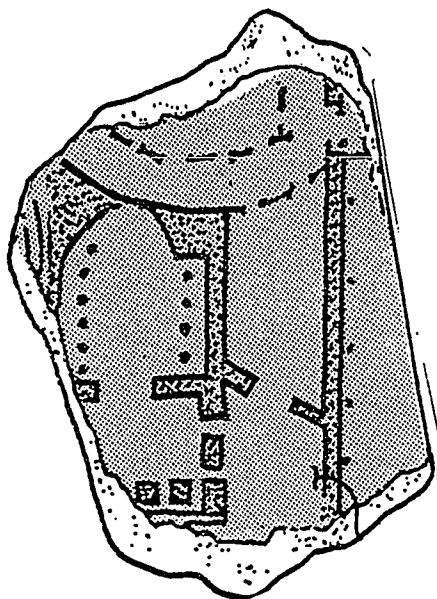
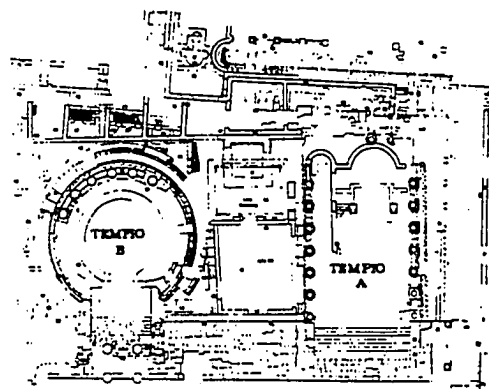
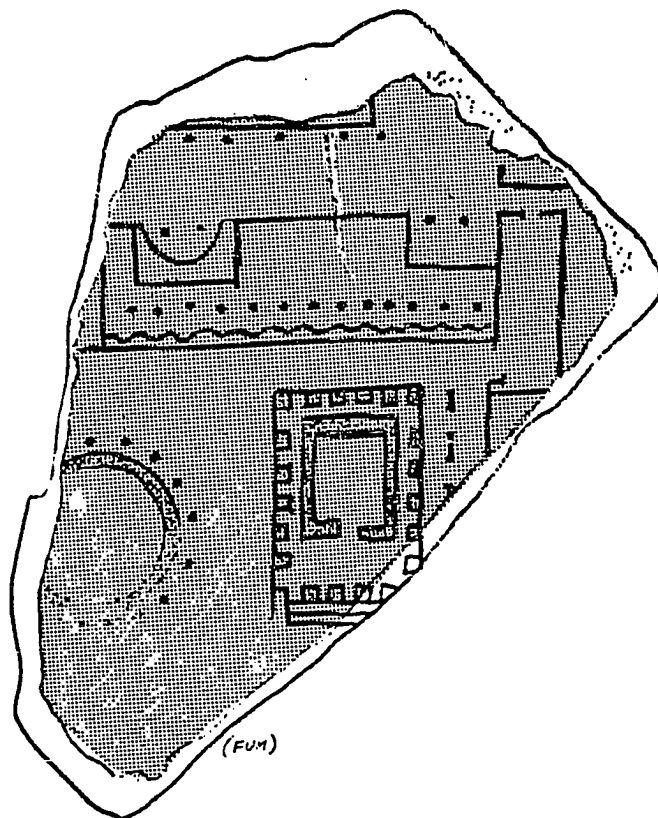


Figure 2.43 The Plan's image of the Temple of Minerva in the Forum Transitorium presents obvious errors and asymmetry due to engraver carelessness. (FUM)



(RICHARDSON 1992)

Figure 2.44 Archaeological evidence shows that Temple A in the Area Acra di Largo Argentina was subjected to slight distortion and the abbreviation of its side columns on the Plan.

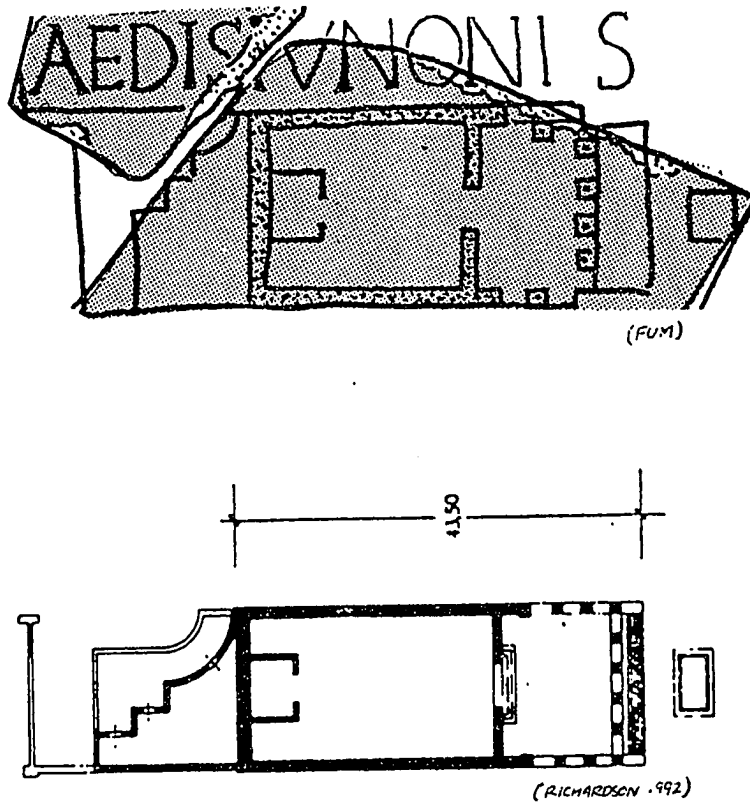


Figure 2.45 The Temple of Juno Regina in the Porticus Octaviae: Marble Plan depiction compared with archaeologically-reconstructed plan.

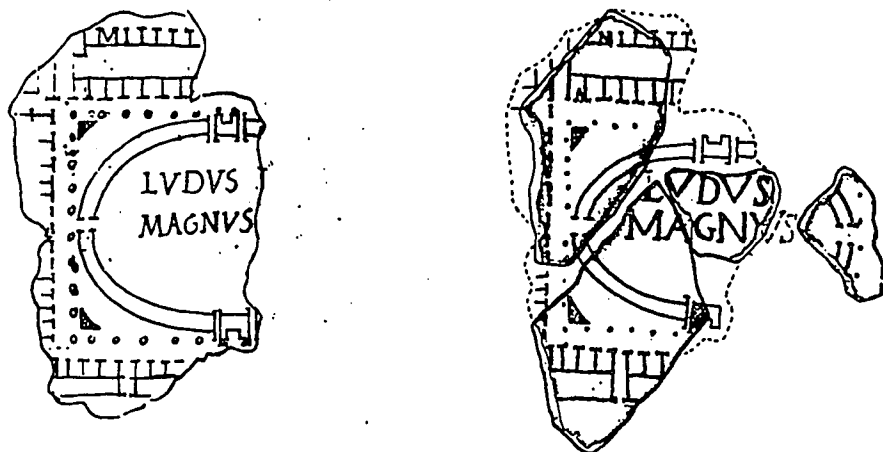
The vertical axis lists folio pages from V. L. 3439, recto (r) or verso (v), followed by a number indicating the specific sheet of drawings in question. Some folio pages collect as many as four originally separate sheets. The numbering follows *PM*, pls. 1-14.

The horizontal axis lists discernible traits seen in each originally separate sheet. Some of these traits are mentioned by Caretoni in his review in *PM* (p. 43-50), and also by Jordan (1874) in his third chapter treatment of the drawings. This table is the product of personal observation at the Vatican Manuscript Library, November 1994.

	red outline	solid columns	open columns	use of ruler	squarish letters	"painterly" letters	ATTRIBUTED TO ARTIST
13r	X		X				A
13v		X		X			B
14r I		X		X			B
14r II		X		X			B
14r III	X		X		X		A
15r I		X		X			B
15r II		X		X		X	B
15v I		X		X			B
15v II		X		X			B
16r I				X			B
16r II		X					B
17r I	X			X			B
17r II	X	X		X			B
18r I						X	B
18r II							B
19r I	X		X	X	X		A
19r II		X		X			B
19r III		X		X			B
19r IV		X		X			B
20r	X		X		X		A
20v		X					B
21r I				X			B
21r II		X		X			B
22r I	X		X		X		A
22r II	X		X		X		A
23r I		X		X		X	B
23r II		X		X		X	B

Figure 2.46. Table of artist traits in Vat. Lat. 3439 Plan fragment drawings.

1. Fo 13r n.3, Ludus Magnus f.6bcd



2. Fo 13r n.2, Serapeum f.35mu

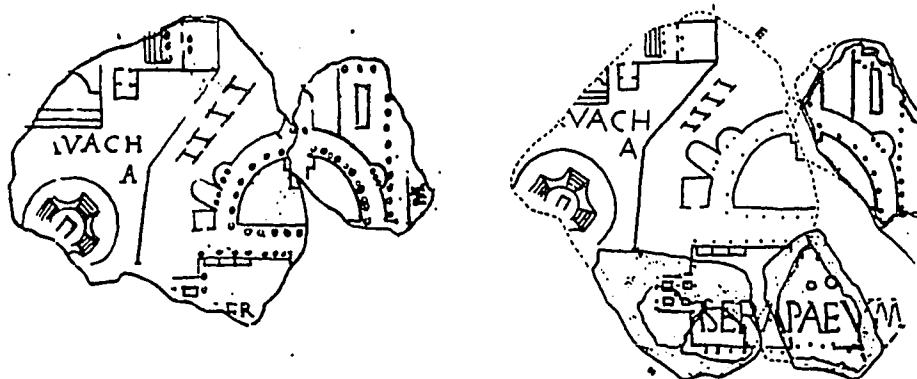
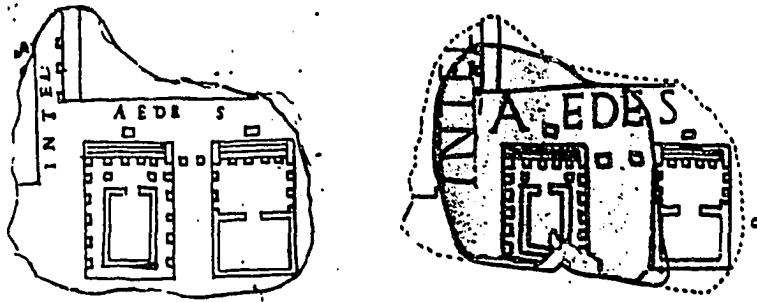


Figure 2.47. Drawings of Renaissance Artist A vs. known fragments

3. Fo 13r n.1, Two Unidentified Temples f.672abcd



4. Fo 14r n.3, Aedes Minerbae f.22bc

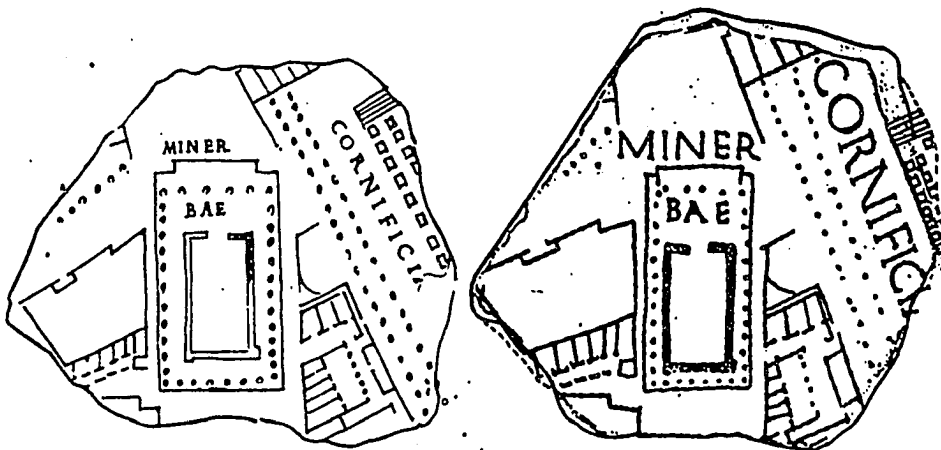
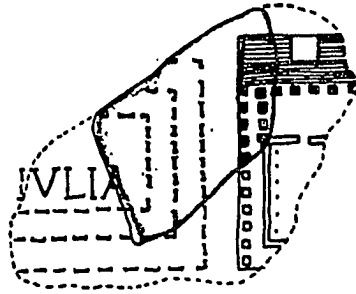
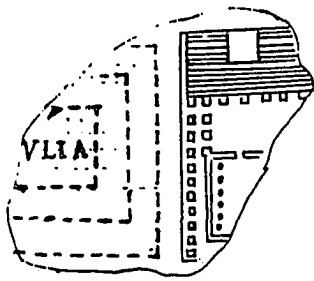
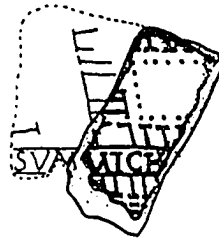
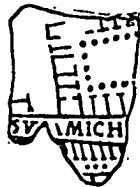


Figure 2.48. Drawings of Renaissance Artist A vs. known fragments

5. Fo 19r n.9, Temple of Castor f.18bc



6. Fo 20r n.1, Vicus Summi Choragi f.3ab



7. Fo 22r n.4, Macellum f.157c



Figure 2.49. Drawings of Renaissance Artist A vs. known fragments

8. Fo 22r n.17, Curiae Veteres f.452d

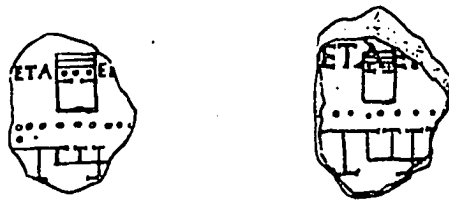


Figure 2.50. Drawings of Renaissance Artist A vs. known fragments

1. Fo 13v n.1, Via Portuense (Trastevere) f.28bc

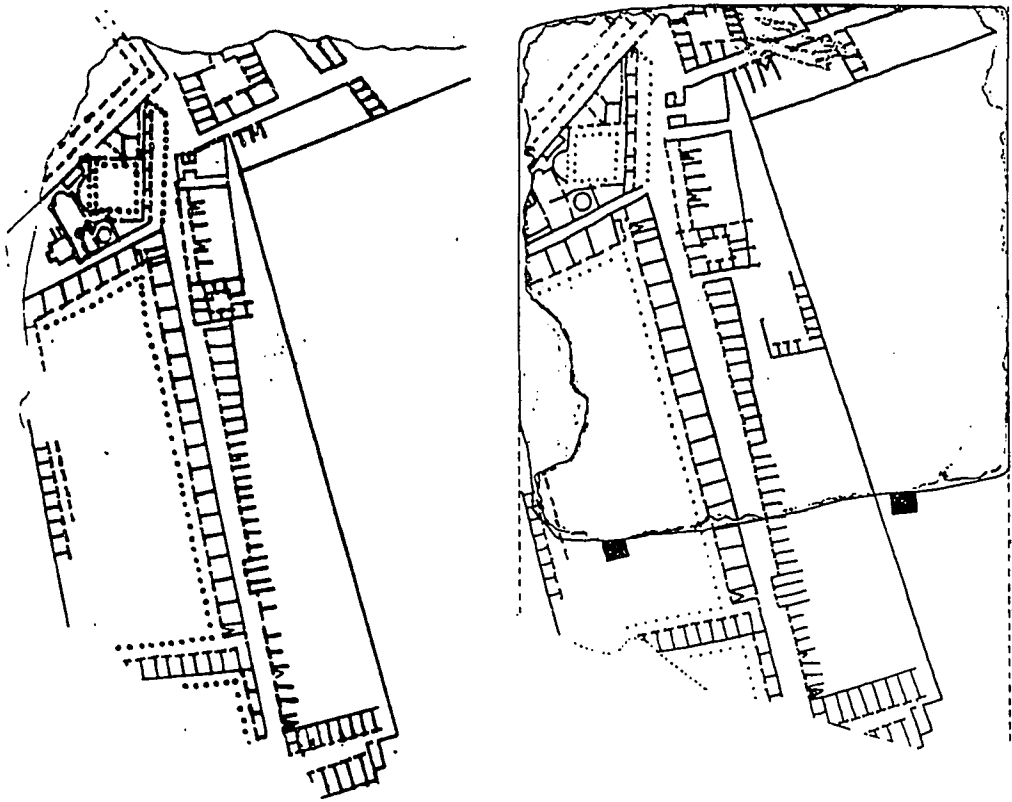


Figure 2.51. Drawings of Renaissance Artist B vs. known fragments

2. Fo 15r n.1, Porticus Aemilia and Galbana Complex f.24ac

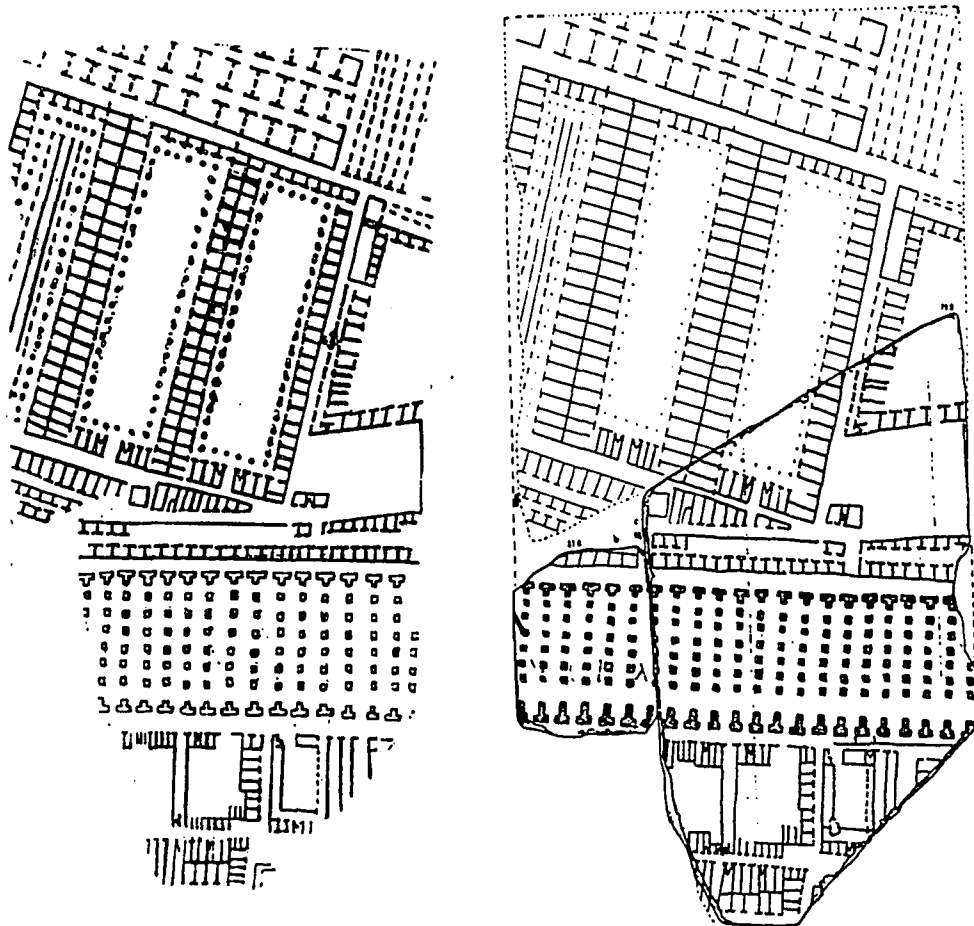


Figure 2.52. Drawings of Renaissance Artist B vs. known fragments

3. Fo 15r n.2, Horrea Lolliana f.25ab

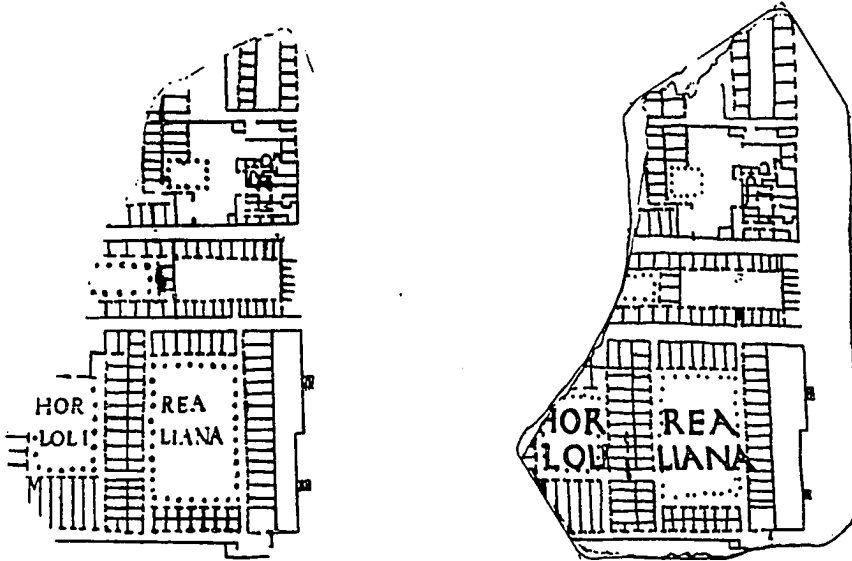


Figure 2.53. Drawings of Renaissance Artist B vs. known fragments

4. Fo 23r n.3, Theatrum Pompei f.38bodef

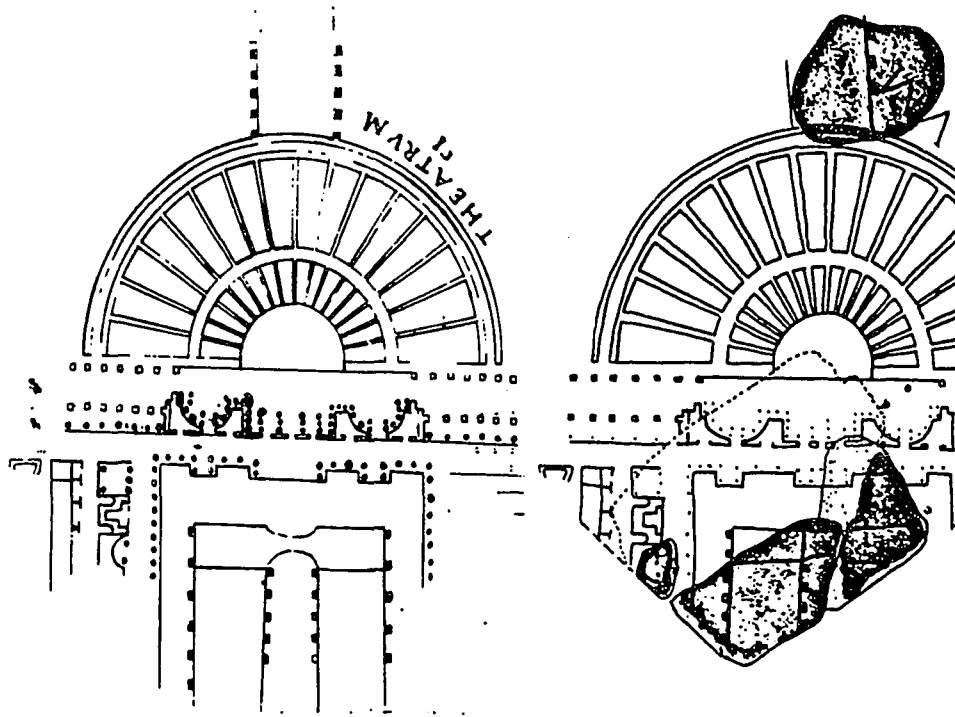
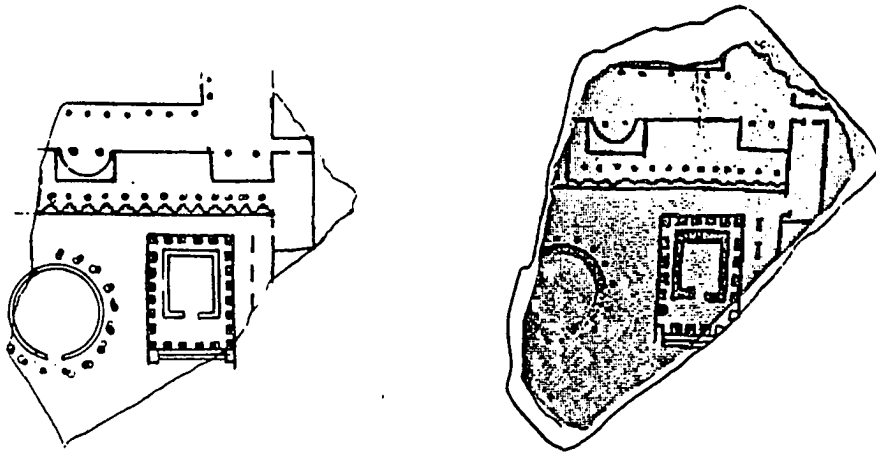


Figure 2.54. Drawings of Renaissance Artist B vs. known fragments

5. Fo 15v n.2, Temples A and B in the Area Sacra di Largo Argentina f.37a



6. Fo 15v n.4, Temples C and D in the Area Sacra di Largo Argentina f.31h

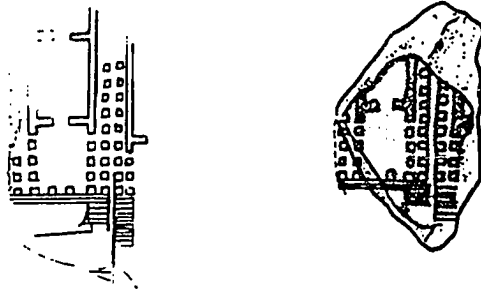
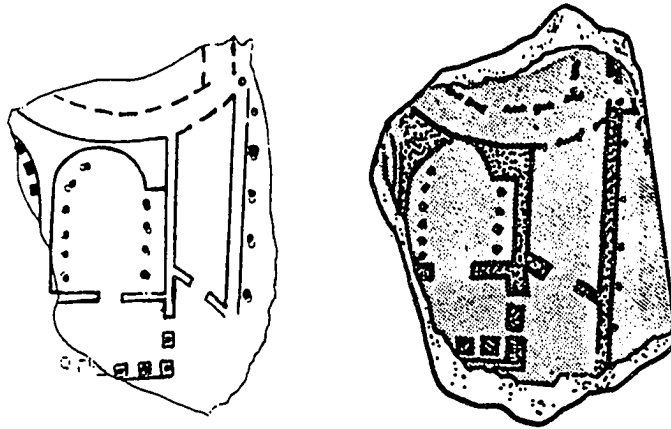


Figure 2.55. Drawings of Renaissance Artist B vs. known fragments

7. Fo 15v n.6, Temple of Minerva in the Forum Transitorium f.16a



8. Fo 18r n.2, Adonaea f.46abcde

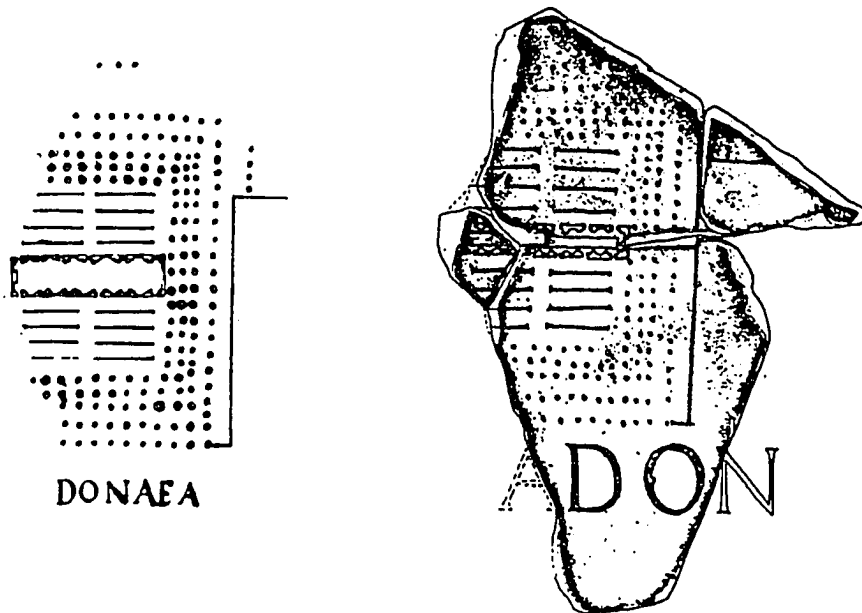


Figure 2.56. Drawings of Renaissance Artist B vs. known fragments

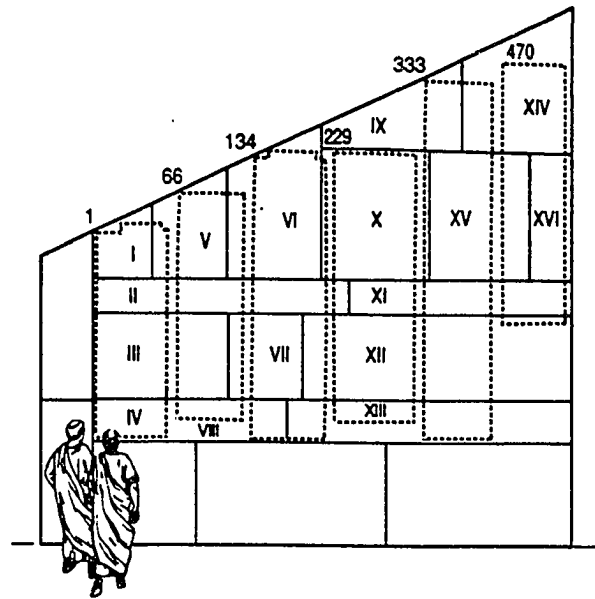


Figure 2.57. The civic inscription of Ephesos is similar to the Marble Plan in that it was a monumental statement of civic pride engraved onto wall-mounted stone slabs, with more detail than was probably legible to the average viewer. (Rogers 1991)

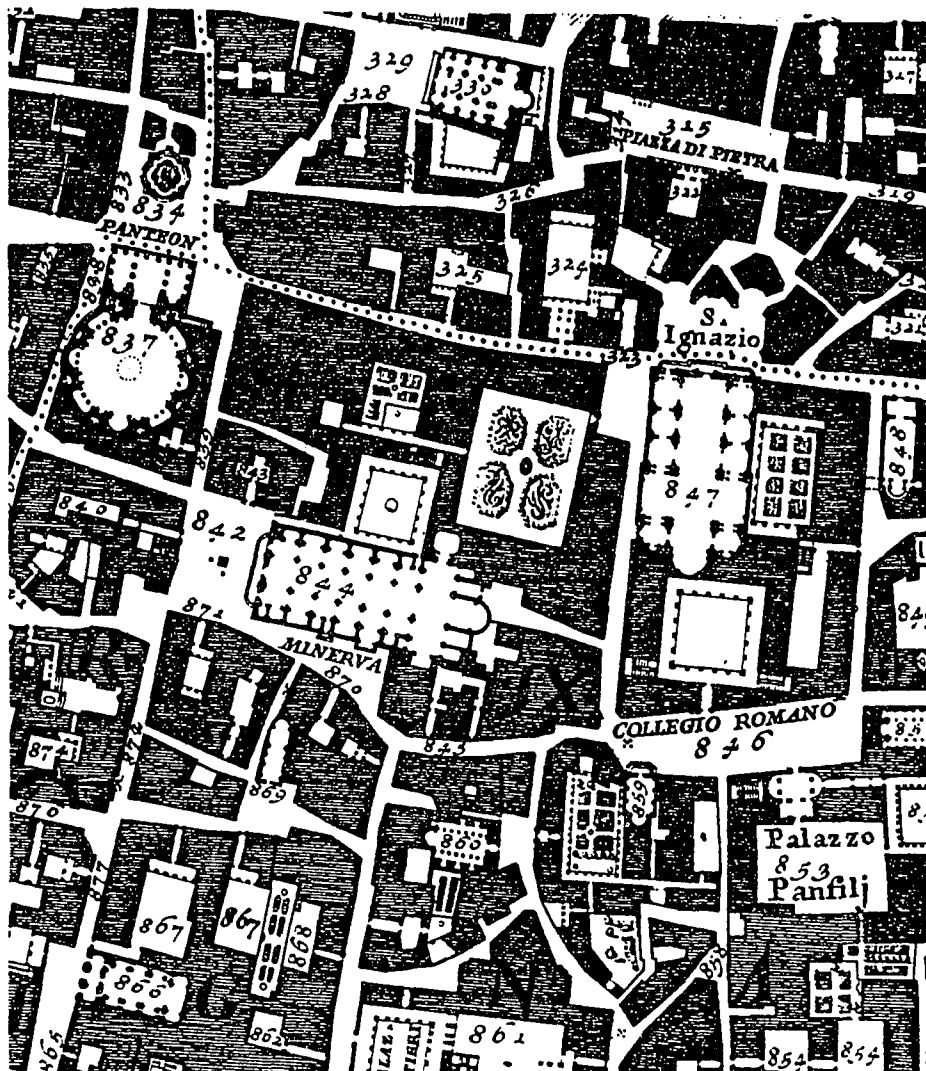


Figure 2.58. The G. B. Nolli Plan of Rome (1748) shows details of semi-public interior spaces of certain buildings, leaving private areas shaded, in a recognition of the public aspect of some interior spaces even in private buildings. At the left of this detail from the map the circular plan of the Pantheon may be recognized. (Nolli 1748 *Pianta di Roma*: Rome)

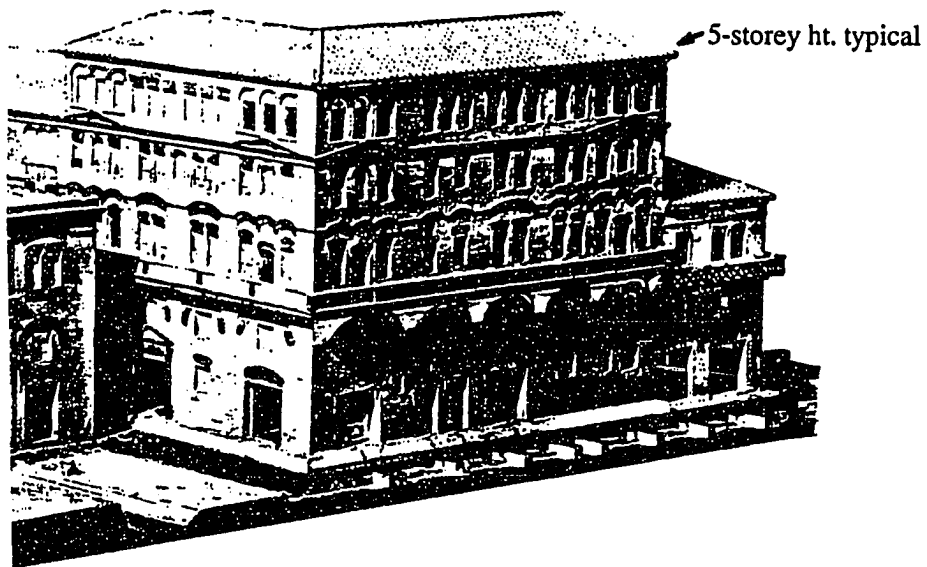


Figure 3.1. Model of an *insula* (apartment building) at Ostia, port of Rome. Such sturdy, well-built brick structures containing spacious, standardized apartment flats were typical in Ostia. The *insulae* of Ostia stand as a ready model for imagining the *insula* at Rome, but they are not entirely appropriate since the Roman apartments were often poorly built structures involving much wooden and even wattle work. (Model in Museum of Roman Civilization, Rome, pictured in Dal Maso (1974), p. 114)

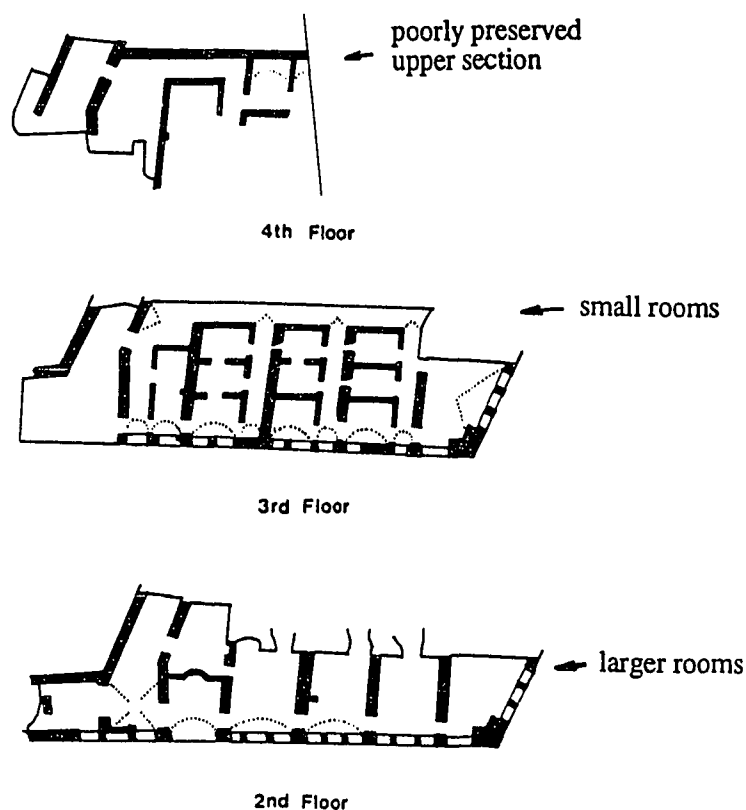


Figure 3.2. Plans of the partially-preserved side of the ancient apartment building on the Via Giulio Romano (the "Aracoeli apartment"). The ground floor was devoted to tabernae, as seen so frequently on the Marble Plan. The second floor contained apartments with spacious rooms, while the third floor contained smaller apartments with small rooms, which may have been let independently or in groups. The fourth floor is not preserved well, and was probably built of less substantial materials (especially wood); in the uppermost floors of insulae were found the smallest rooms, "cellae," cheaply built and individually let. The Aracoeli apartment supports the image of insulae derived from Roman literature, and assists in reconstructing the nature of Rome's dwelling structures above the ground floor level. (Stambaugh (1988), Fig. 18)



Figure 3.3. Tabernae with wide doors and lofts. The doors of the tabernae (the four rightmost doorways) are wide, for displaying the shop and its wares to passersby. The leftmost two doorways are narrower, and lead to residences. The second floor of this insula shows typical loft sleeping room windows within brick arches built into the face of the building. (Horrea Epagathiana at Ostia, restoration in Packer (1971), Fig. 89)

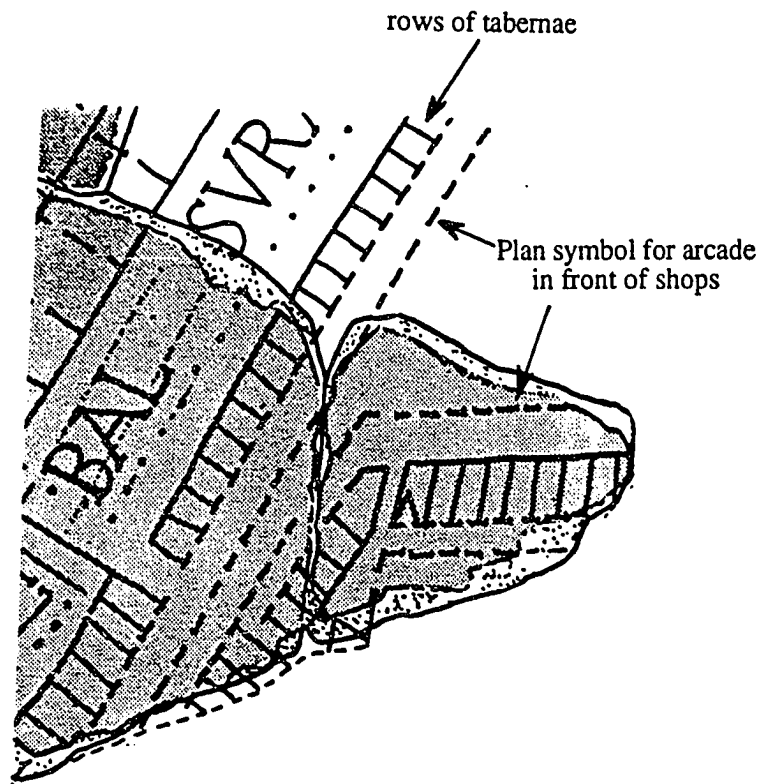
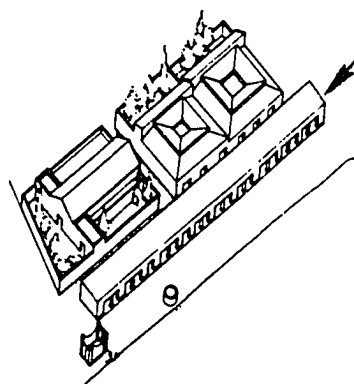
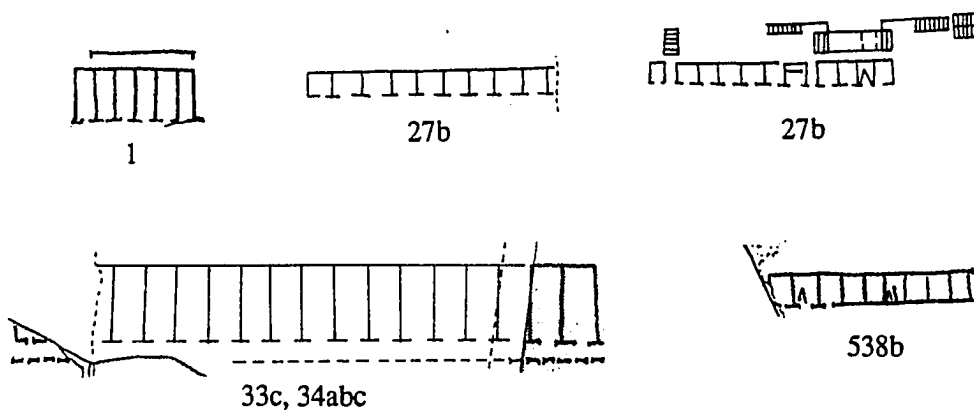


Figure 3.4. Tabernae lining the streets on fragment 21 of the Marble Plan. Tabernae are the most common architectural unit on the Plan. (*FUM*)

- A. The Tabernae Veteres ("Old Shops")
on the north side of the Roman Forum,
fourth century B.C.



- B. Tabernae in single rows as shown on the Marble Plan.



- C. Tabernae in
single row as
excavated at Ostia

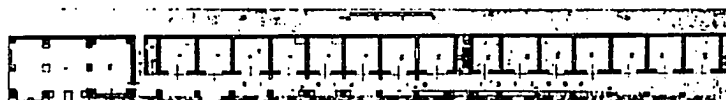


Figure 3.5. *Tabernae* in single rows were a characteristic form in Rome from the earliest days of the republic. The form persisted into Severan Rome, as shown by the Marble Plan, and is also seen at Ostia. (A, Stambaugh 1988, Fig. 7 [detail]; B, FUM; C, Ostia I, vi, 1 from Packer 1971, p. 97)

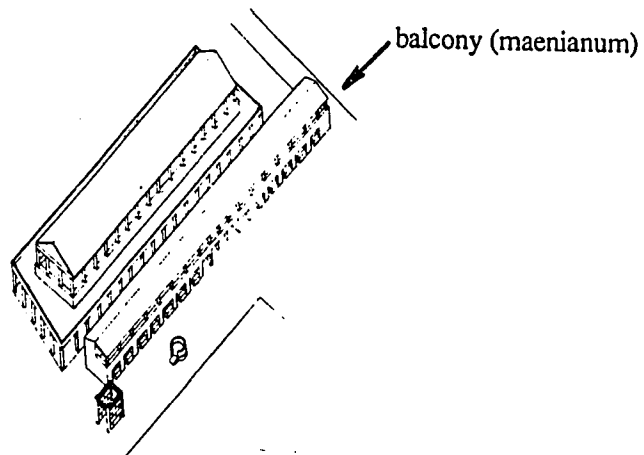


Figure 3.6. Balconies, or *maeniana*, became a typical feature above many tabernae in Italian cities. These balconies took their name from a certain Maenius who first equipped the tabernae in the Roman Forum with balconies (shown here) for spectators. (Stambaugh (1988), detail of Fig. 8)

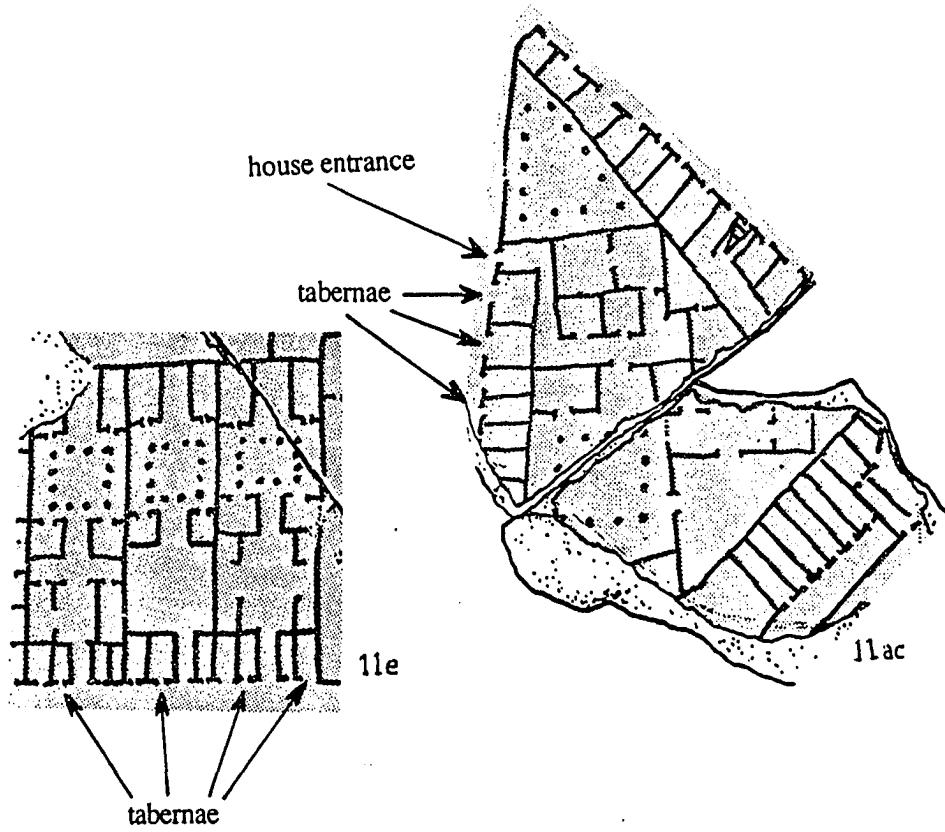


Figure 3.7. Tabernae adjoining private houses. Tabernae sometimes flanked the streetfront entrance to a private house, since the owner could derive valuable rent from the frontage property.

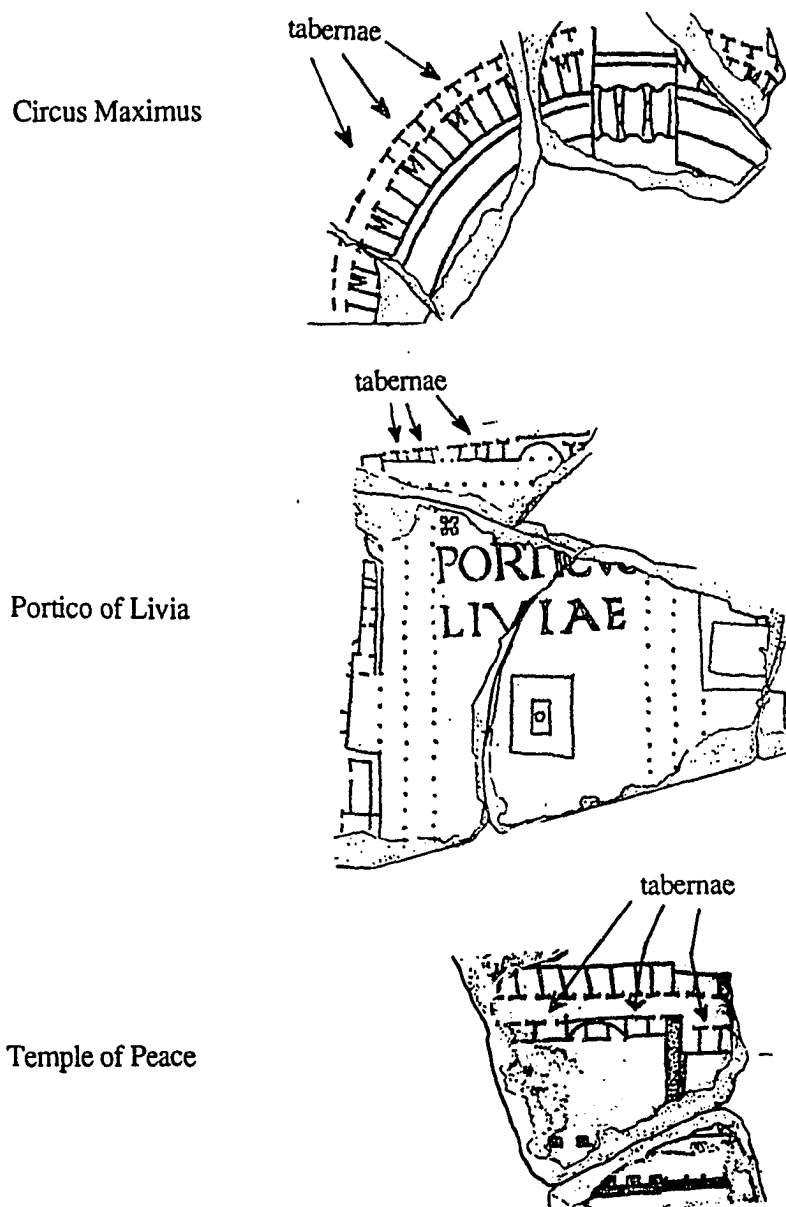


Figure 3.8. The state derived rent from tabernae addressed to monumental public buildings, such as those around the perimeters of the Circus Maximus (fr. 7a-d), the Portico of Livia (fr. 10mpq), and the Temple of Peace (fr. 15ab). (*FUM*)

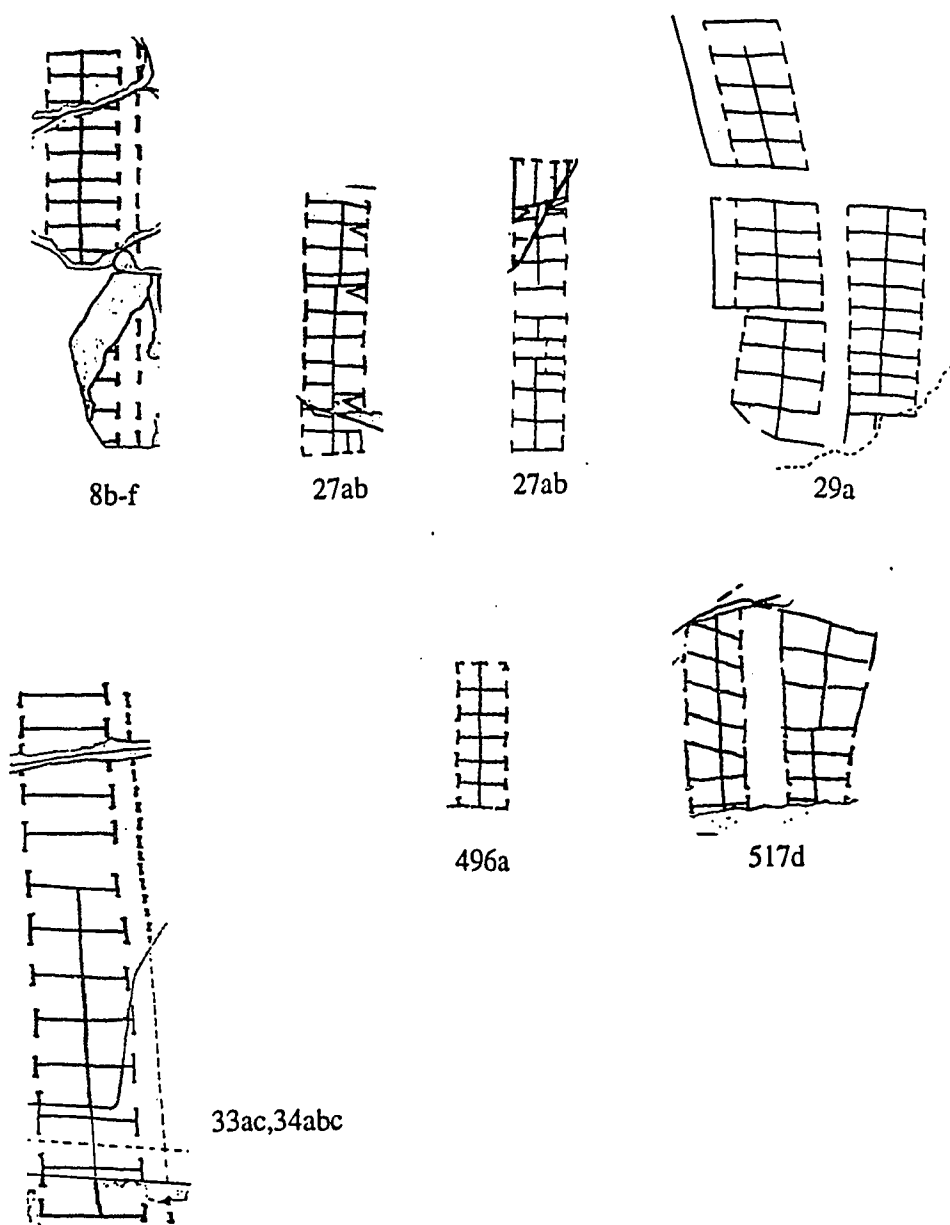


Figure 3.9. Tabernae in back-to-back rows on the Marble Plan. This configuration is fairly common on the Plan. (*FUM*)

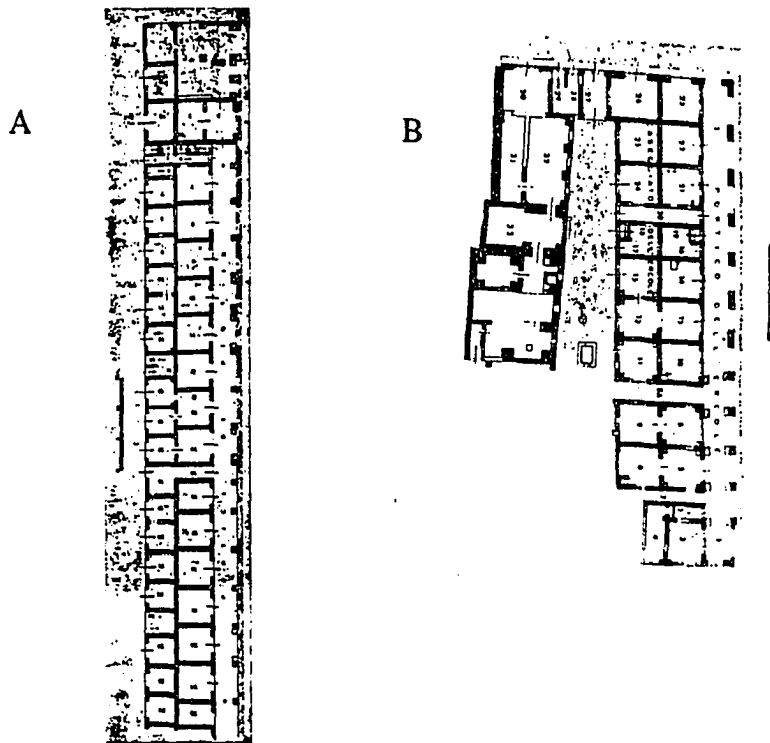


Figure 3.10. Tabernae in back-to-back rows are found at Ostia which closely resemble the structures seen on the Marble Plan. A, Ostia I, 5, 1-2; B, Ostia IV, 2, 2-4. (Packer (1971), pp. 97 and 109)

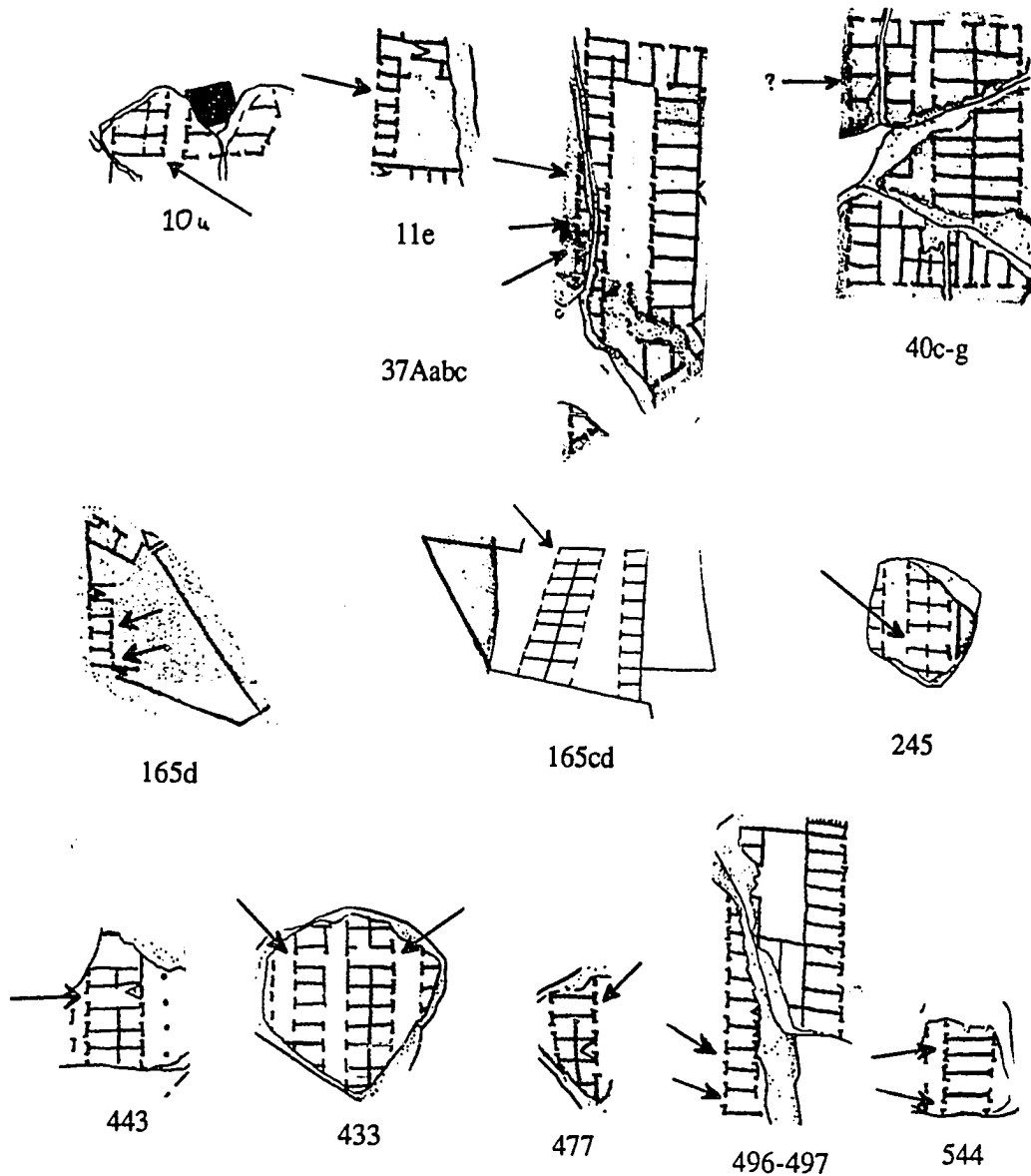


Figure 3.11. Some tabernae on the Plan open on two opposite sides. These are probably to be interpreted as domestic and commercial faces. Wooden partitions that might have offered some internal separation are omitted on the Plan. (FUM)

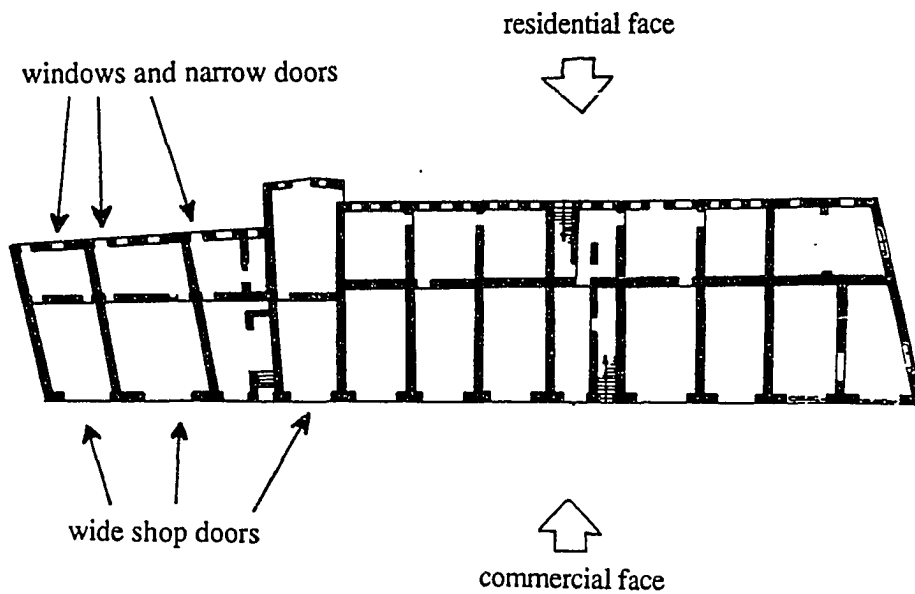


Figure 3.12. Preserved tabernae in Ostia (III, iii, 1) show that a structure might have distinct commercial and residential faces. Most of the tabernae illustrated here have wide shop entrances on one face, and small residential doorways and windows on the opposite face. The partitions between the rooms are masonry in this instance, but in the more lightly built structures of Rome would often have been wooden. (Packer (1971), p. 102)

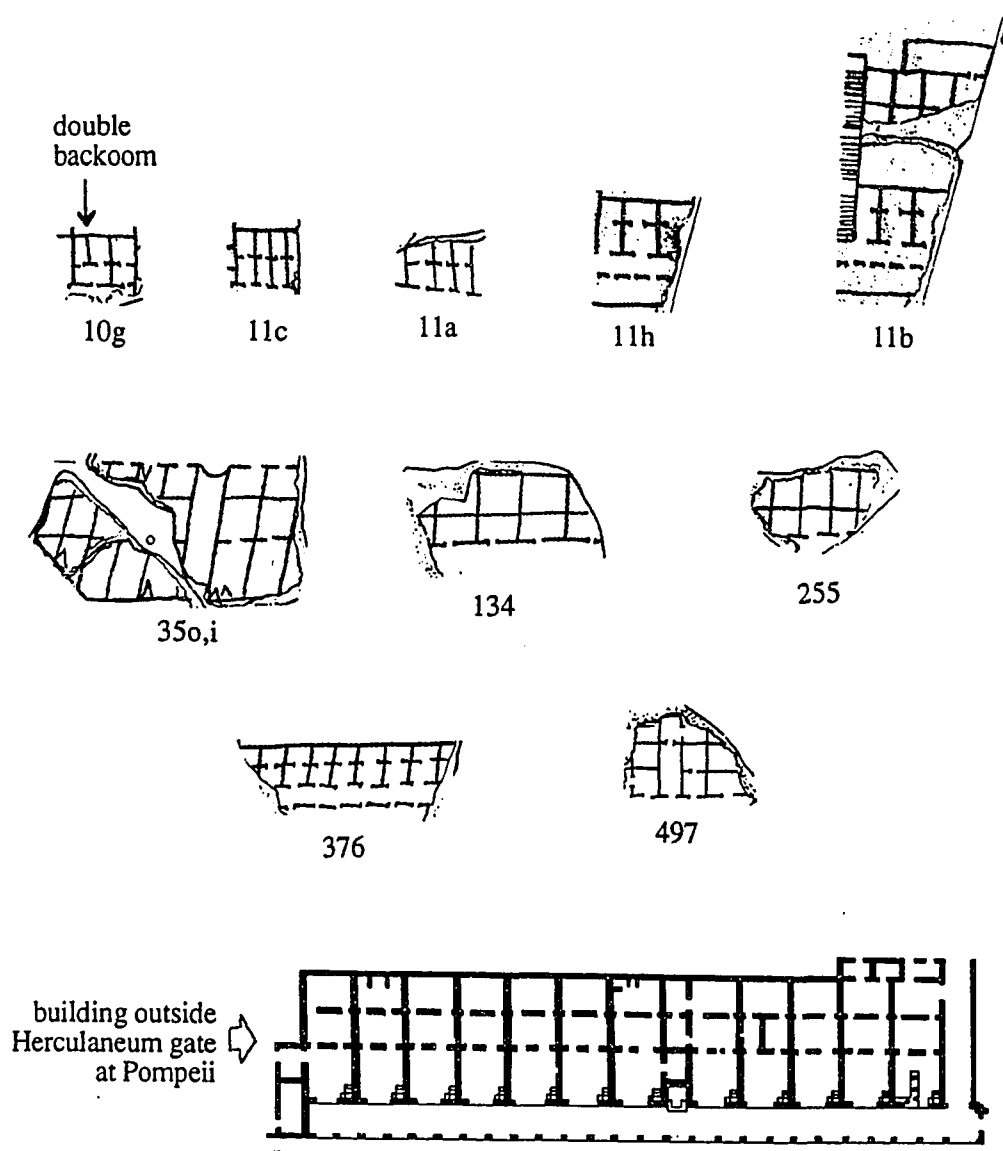


Figure 3.13. Tabernae with backrooms. Tabernae in Rome could have backrooms for living space or for additional production space. Frs. 134 and 255 omit to illustrate the doorways connecting the front with the backrooms. Backrooms are also found in the tabernae of excavated structures elsewhere, such as the building outside the Herculaneum gate at Pompeii. (fragments from *FUM*, Pompeii plan from Packer (1971), p. 111)

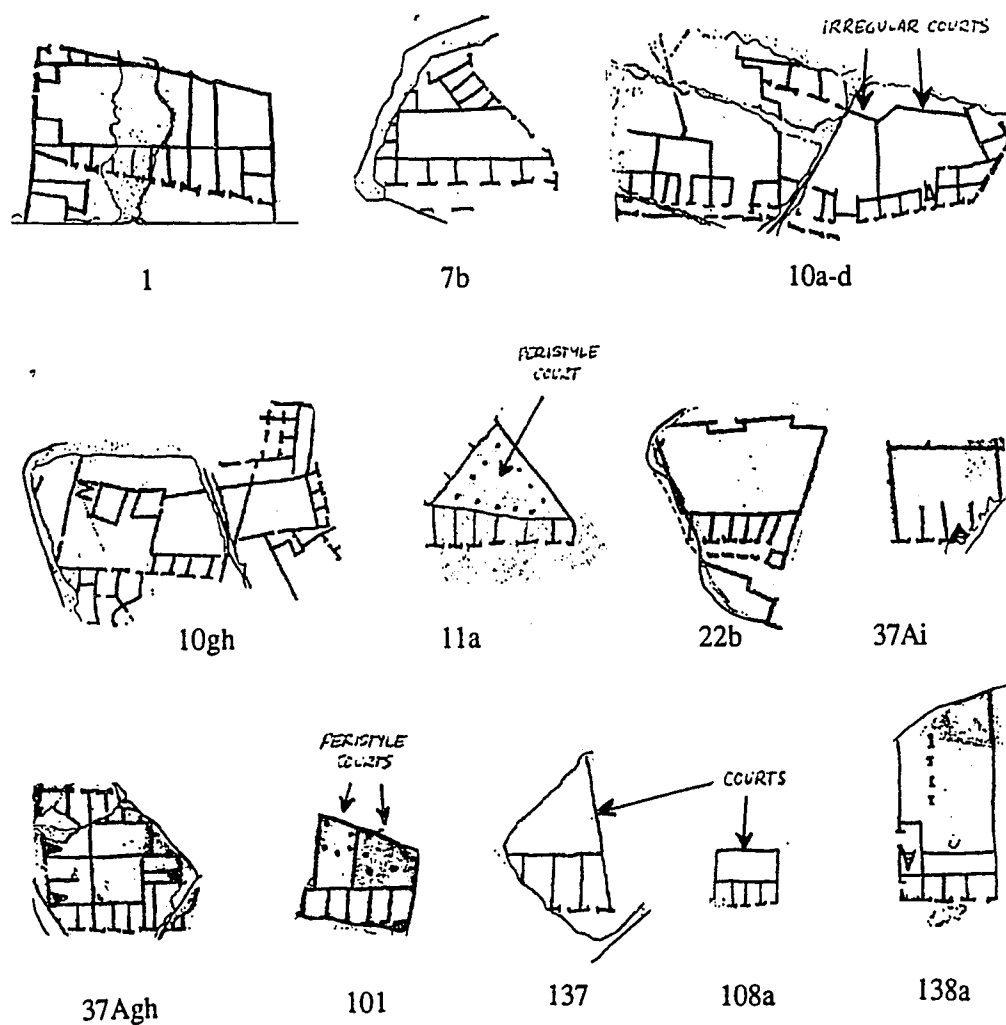


Figure 3.14. Tabernae with rear courts on the Marble Plan. This was a very common architectural configuration, as the open space or garden area of a court was a very desirable in the crowded city. (*FUM*)

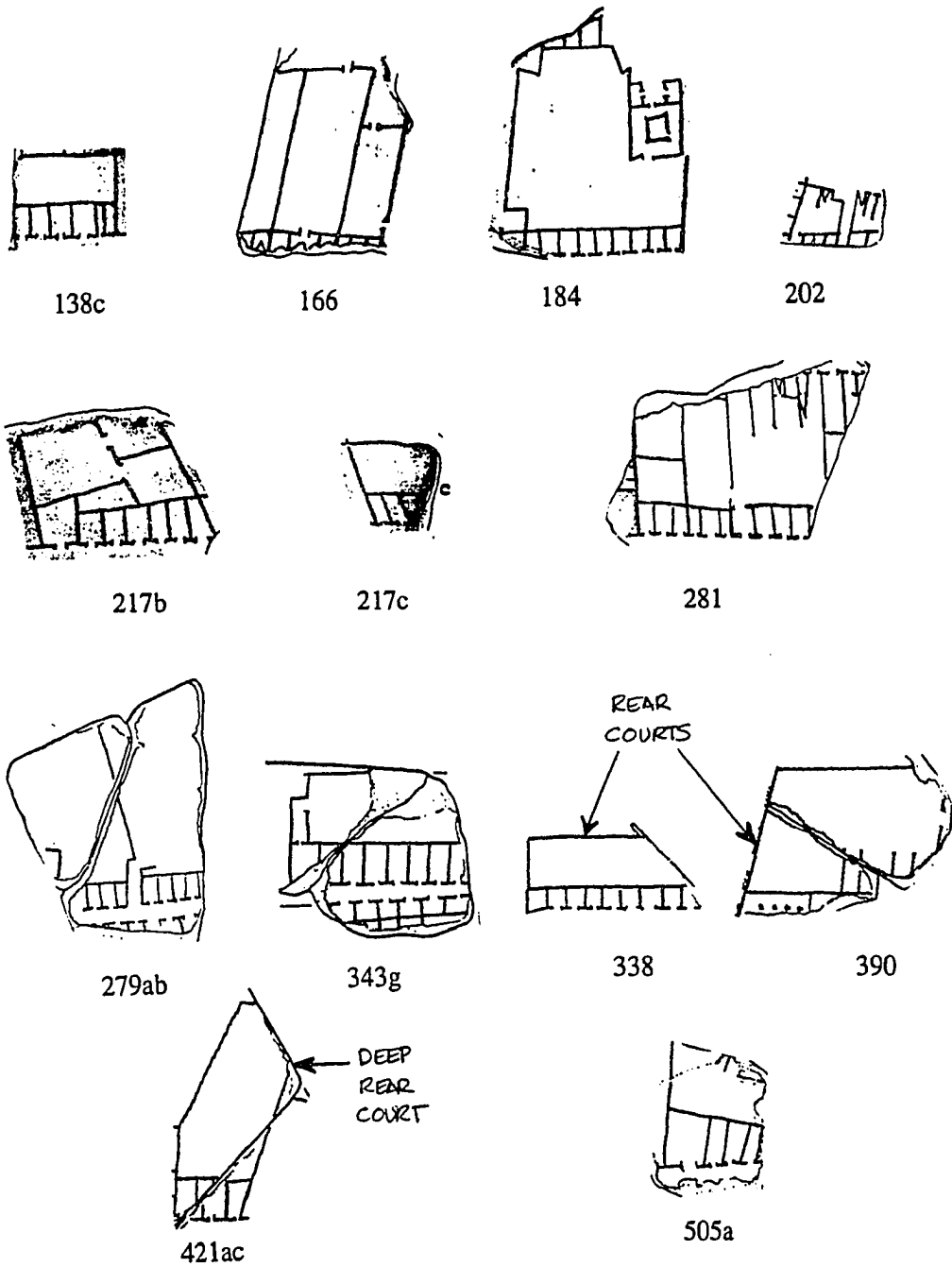


Figure 3.15. Further examples of tabernae with rear courts on the Marble Plan. (*FUM*)

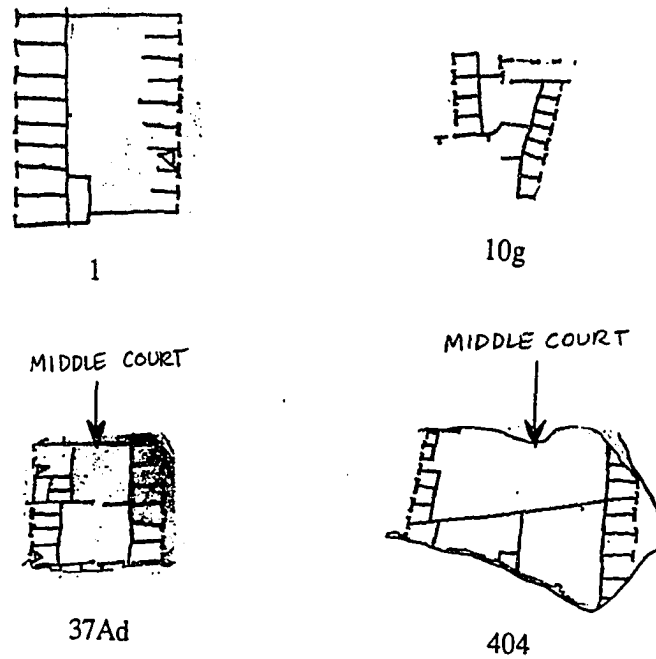
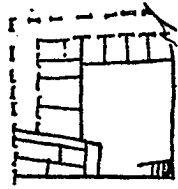


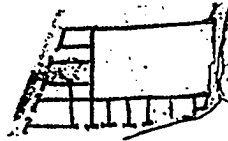
Figure 3.16. Tabernae on opposite sides of a court, from the Marble Plan. More tenants shared the open space in this configuration than in the simple 'rear court' arrangement. (*FUM*)



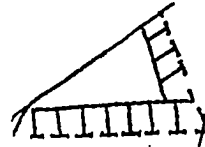
27a



138de



217a



538a

Figure 3.17. Tabernae on adjacent sides of a court, from the Marble Plan.
(FUM)

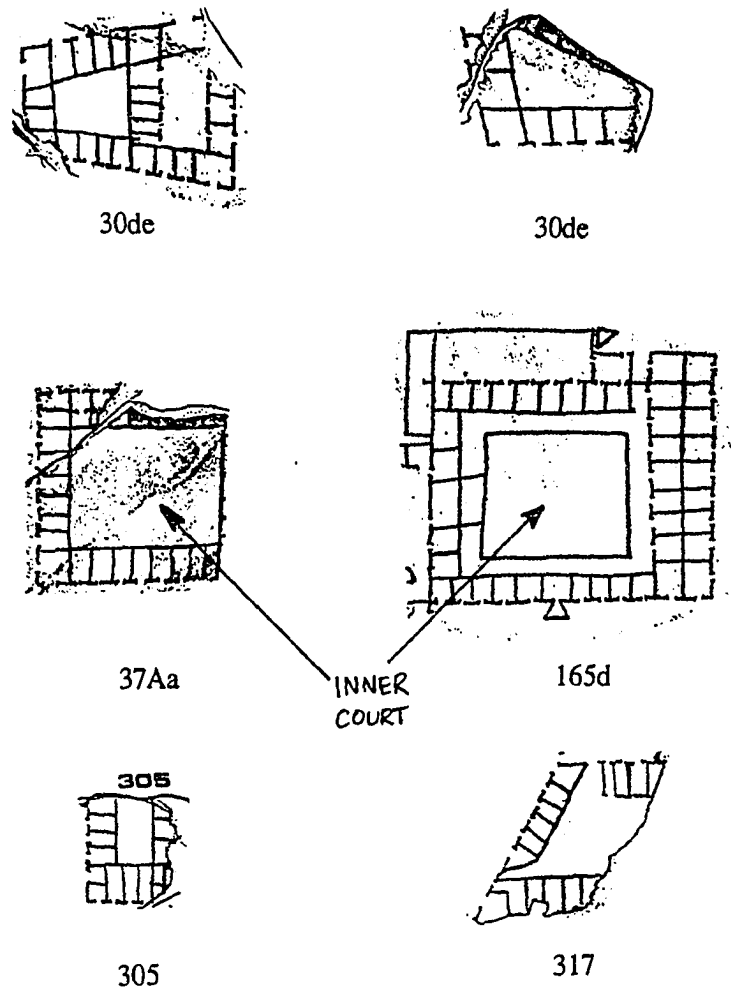


Figure 3.18. Tabernae surrounding shared court spaces, from the Marble Plan. (*FUM*)

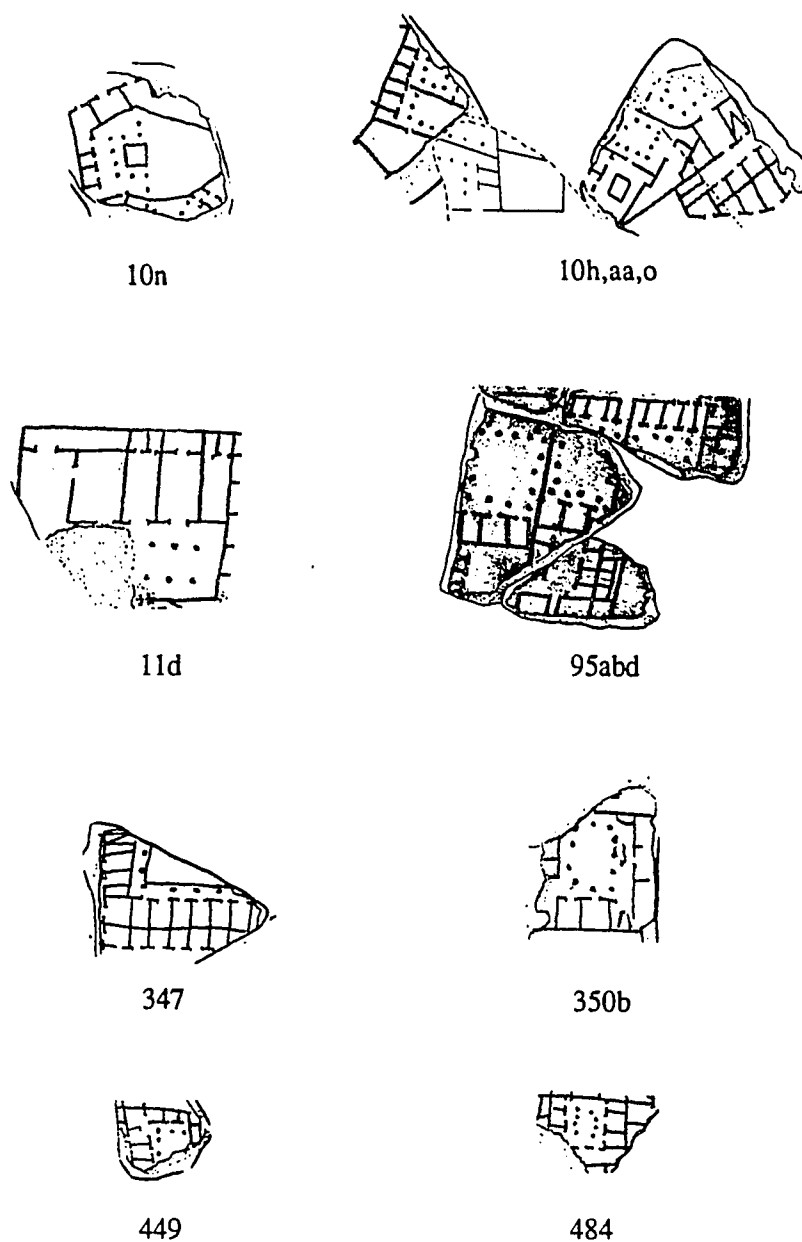


Figure 3.19. Tabernae facing in on shared court spaces, from the Marble Plan. Inward-facing tabernae are likely to have been dedicated residential spaces. Courtyards with inward-facing tabernae frequently have porticoes, as illustrated in these examples shown with columns. (*FUM*)

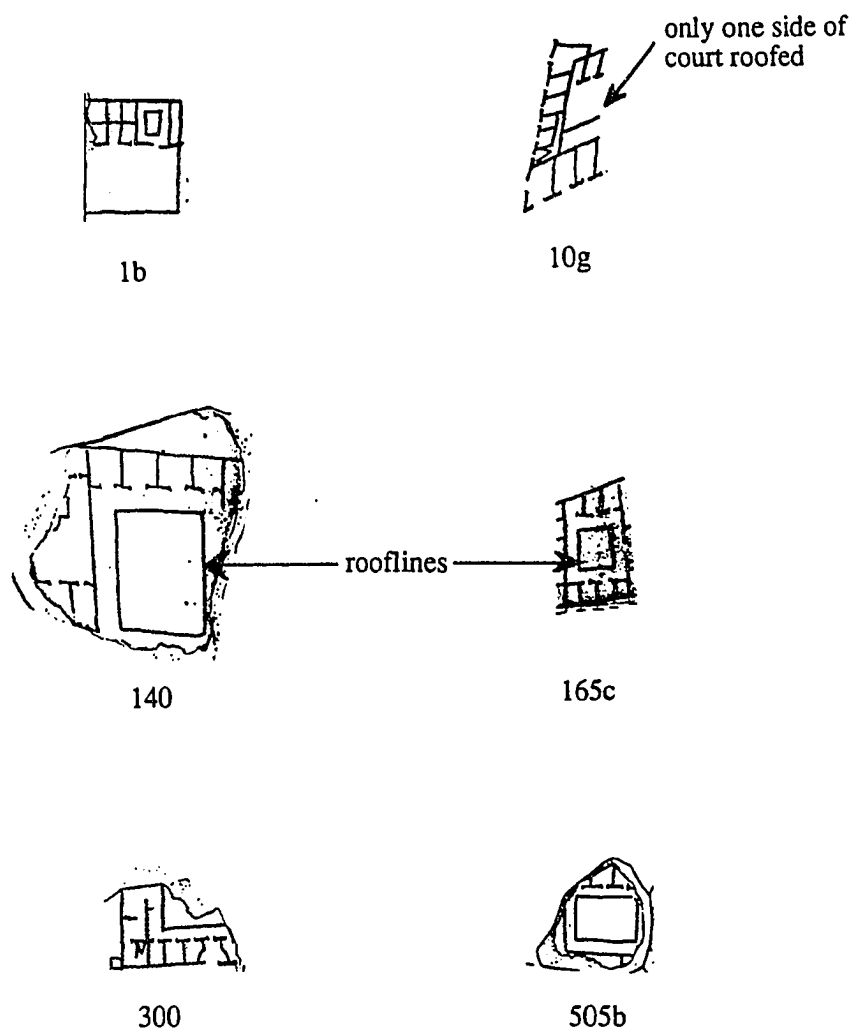
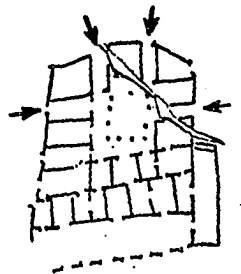
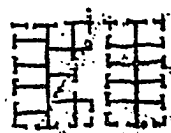


Figure 3.20. Further examples of tabernae facing in on shared court spaces, from the Marble Plan. Courtyards with inward-facing tabernae frequently have porticoes, indicated in these examples by the portico roofline (an alternative convention to the illustration of individual columns). (*FUM*)

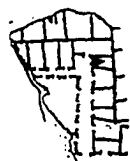
MANY ENTRANCES



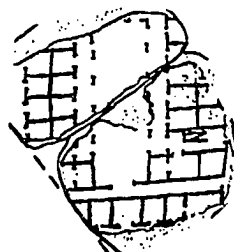
10m



138a

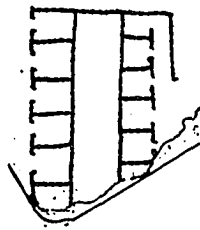


345

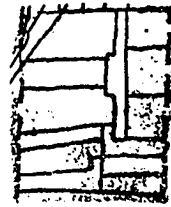


548ab

Figure 3.21. Tabernae on the Marble Plan facing in on court spaces identified as shopping bazaars rather than residential areas. (FUM)



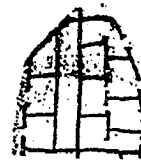
25a



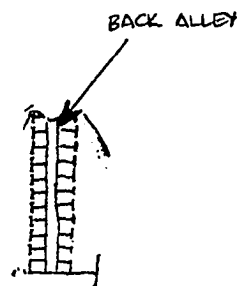
40c



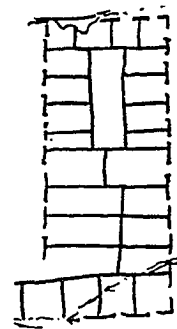
141b



165d



259



336

Figure 3.22. Tabernae backing onto a corridor or alley space. Corridor or alley space would provide at least a modicum of light and air via (un-illustrated) windows or doorways at the rear of these tabernae. (*FUM*)

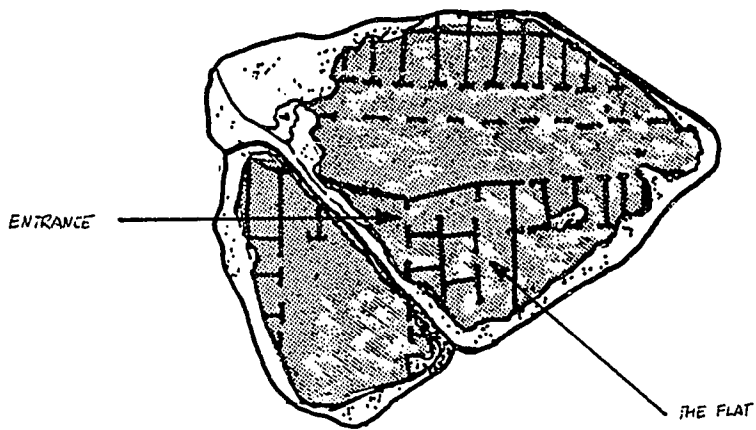


Figure 3.23. A small irregular flat on the Marble Plan (fr. 320ab). (*FUM*)

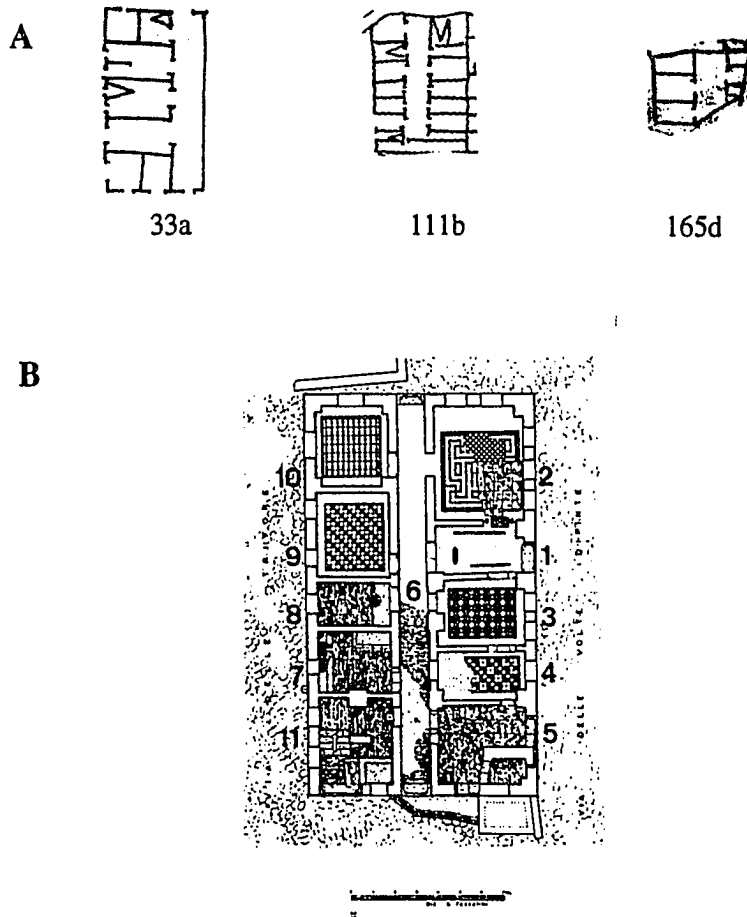


Figure 3.24 A--Corridor flats on the Marble Plan. This configuration would most often appear on the upper floors of insulae (as on the third floor of the Aracoeli apartment building), explaining their scarcity on the Marble Plan. B--A corridor flat from Ostia (Ostia III, v, 1) serves as a reminder that corridor flats could be held by single tenants, and might be well-decorated. (A--*FUM*, B--Packer (1971), plan 20)

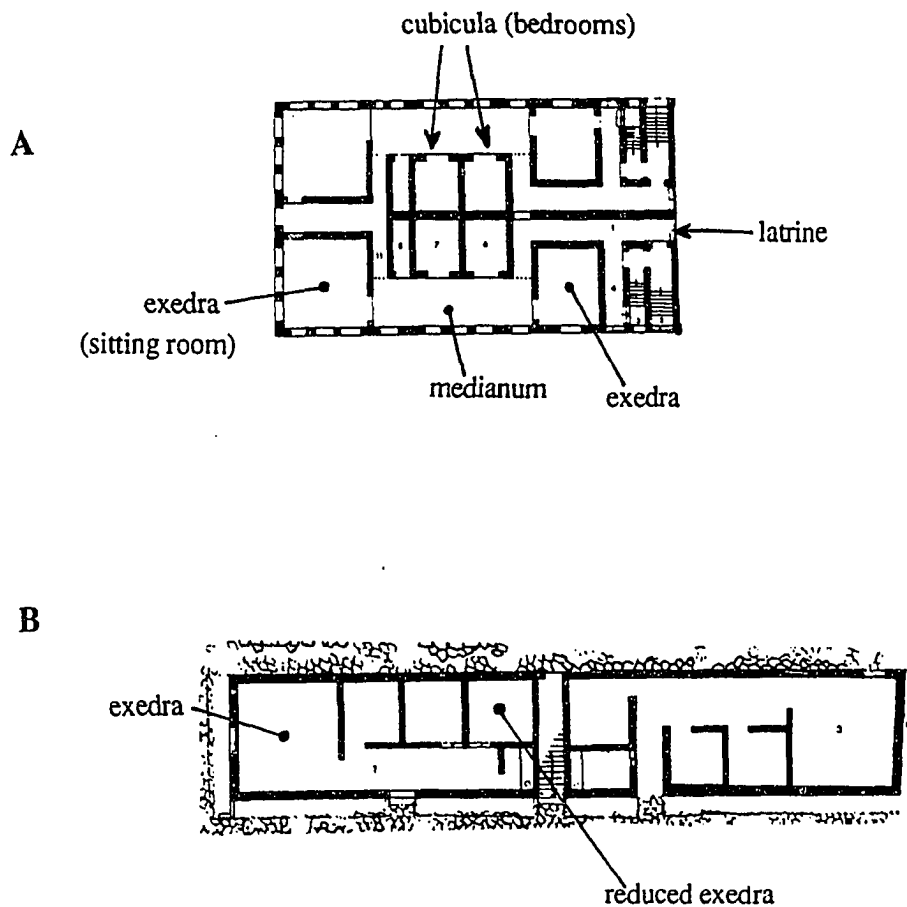
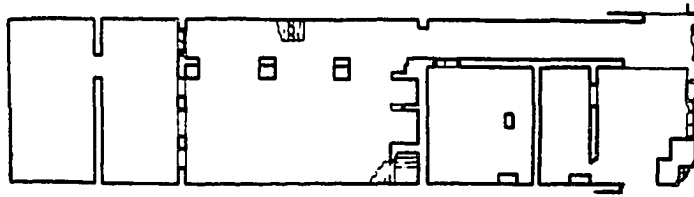


Figure 3.25 The medianum apartment as known from Ostia. This plan has not been identified on the Marble Plan, but was very common in Ostia, and may have occurred in Rome on upper floors not illustrated by the Plan. The medianum apartment could be rented by a single tenant or family, or could be parceled out to multiple tenants, who would share the medianum as a common eating (and sometimes cooking) space. A--a double medianum (Ostia III, ix, 15) B--alternative versions of the medianum, which reduce the size of the secondary exedra (Ostia III, xii, 1,2). (Packer (1971), plans 23 and 30)

A



B

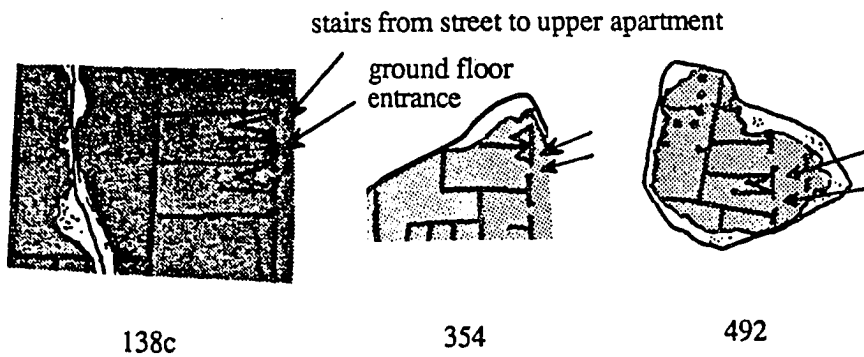


Figure 3.26. The "strip house," a narrow plan in which a street-front staircase provides separate access to upper-class apartments above the shop-dwelling on the ground floor, which has a court or larger rooms behind a corridor passing the staircase. A--the Roman strip house at the *Semita dei Cippi*, at Ostia (Boethius 1960). B--strip houses appearing on the Marble Plan (FUM). This form has persisted into twentieth-century Italy as well.

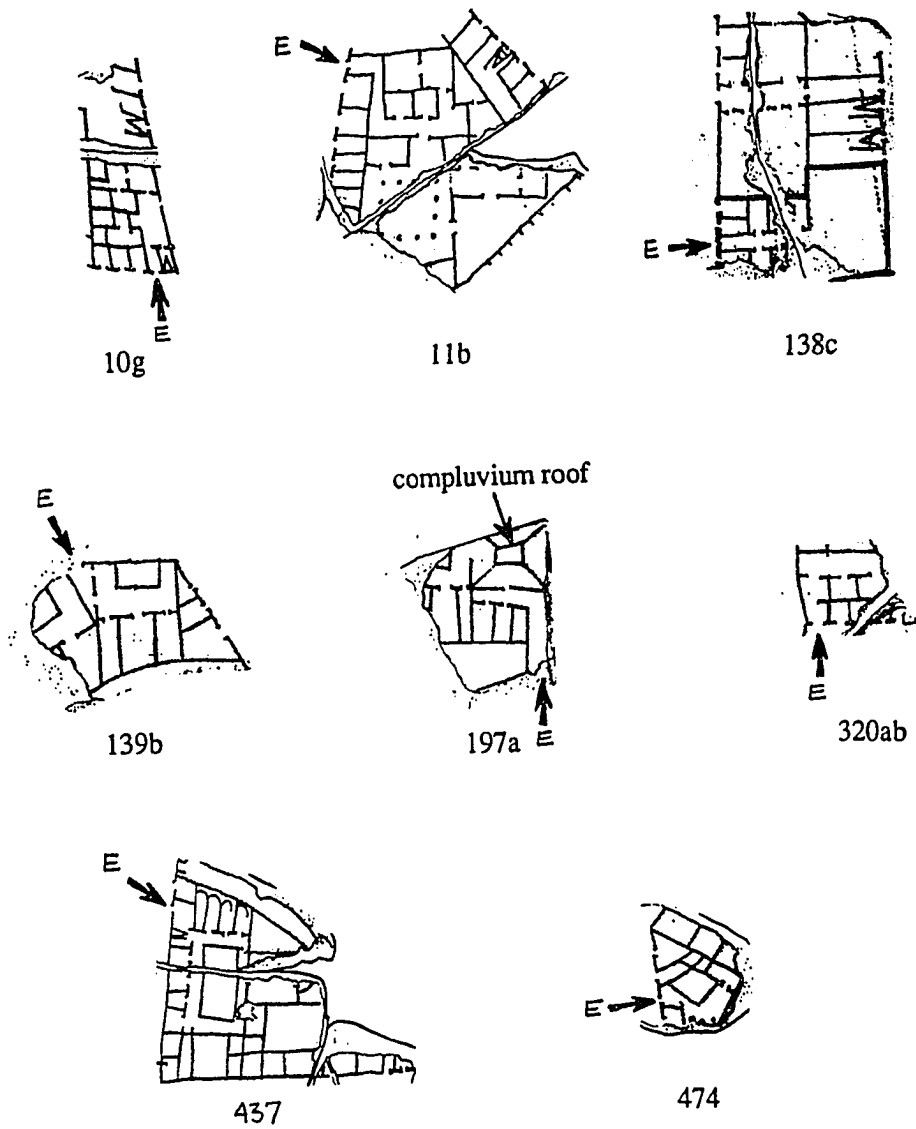


Figure 3.27. Irregular flats or houses from the Marble Plan. (FUM)

E → = entrance

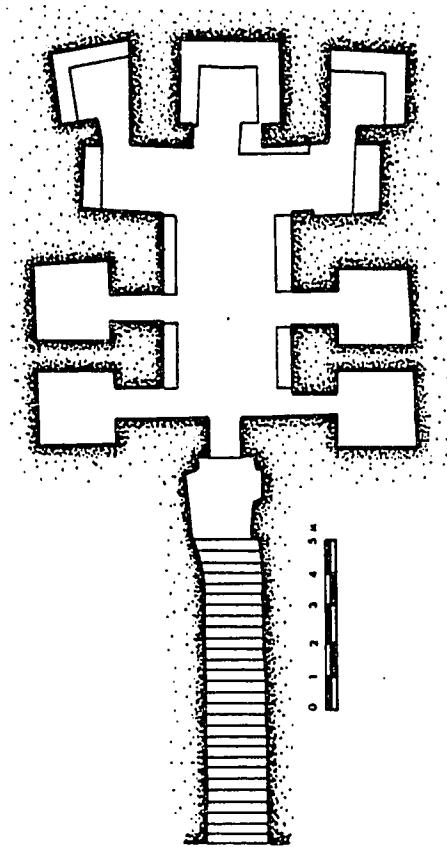


Figure 3.28. Etruscan underground tomb, mimicking the layout of a house. This form of house became the traditional Roman atrium house. Perugia, Tomb of the Voltumnii, second half of the second century B.C. (Sear (1982), Fig. 2 a)

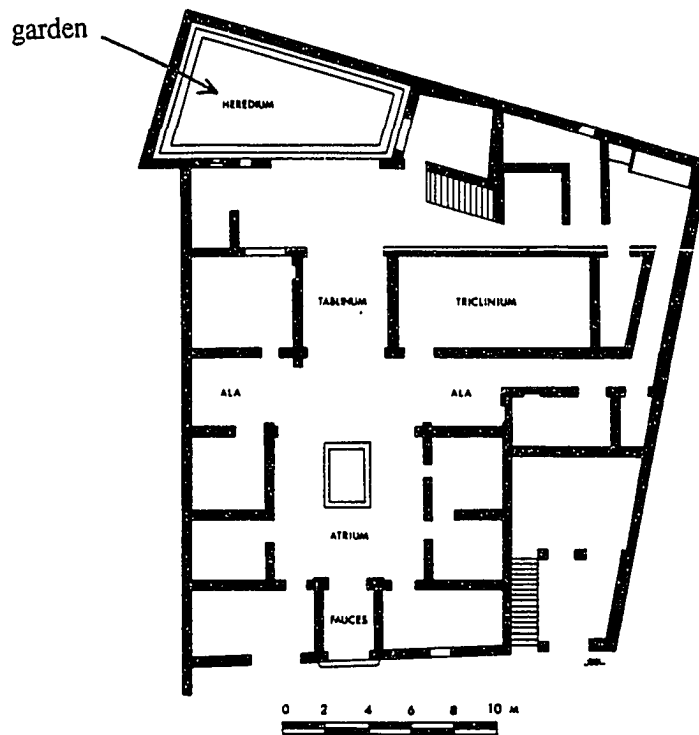


Figure 3.29. Traditional Roman atrium house, as seen in the example of the House of the Surgeon at Pompeii, dating from the fourth or third century B.C. (Sear (1982), Fig 2 b)

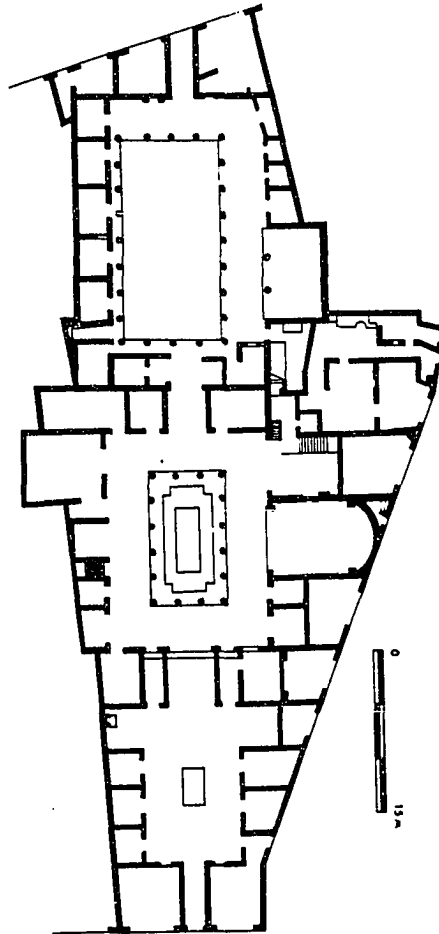
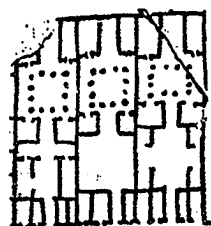
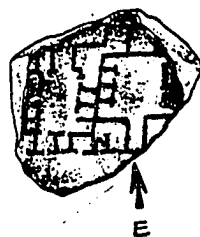


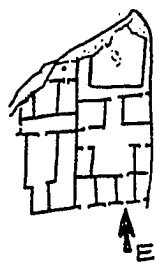
Figure 3.30. Roman peristyle house, an expanded form of the traditional atrium house design. The traditional atrium house components appear at the bottom of the plan, with peristyle courts and their subsidiary rooms added in the rear. House of the Colored Capitals at Pompeii, dating to the second century B.C. (Sear (1982), Fig. 16)



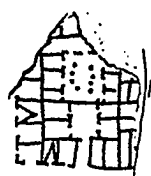
11e



81



331



484

Figure 3.31. Domus, private houses, on the Marble Plan. (*FUM*)

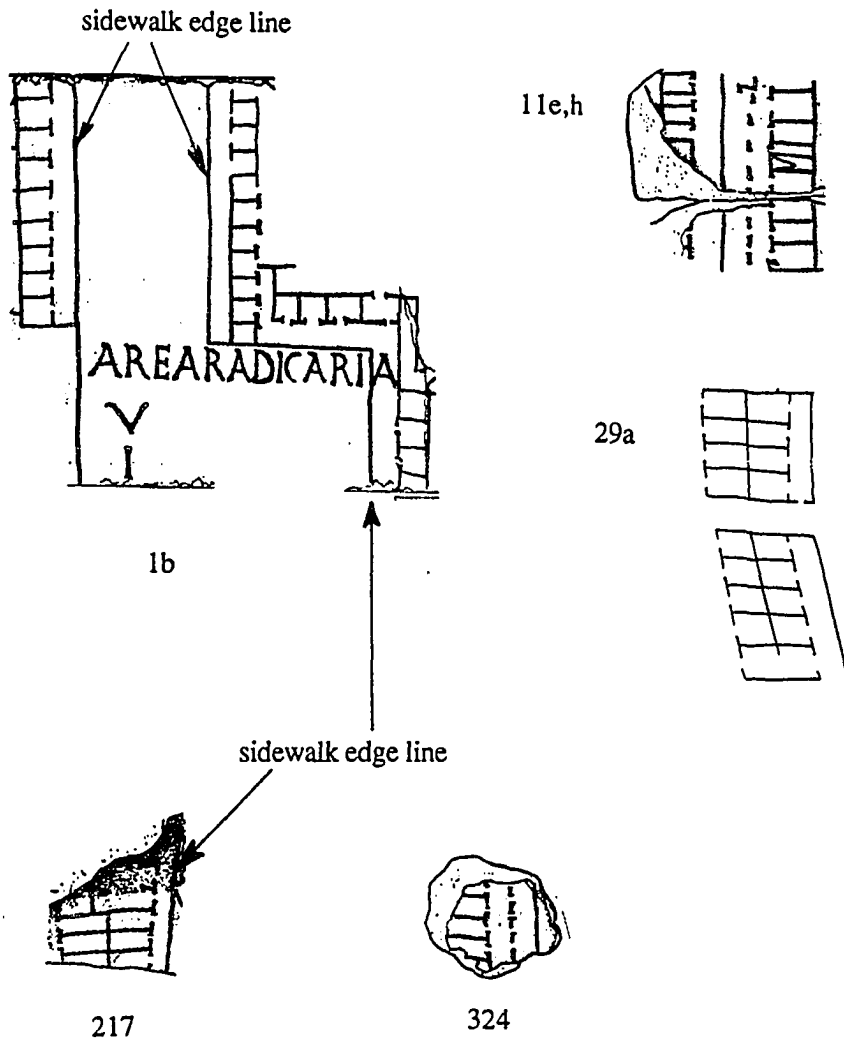


Figure 3.32. Tabernae furnished with sidewalks. Sidewalks were a particular amenity in Rome, where many streets were unpaved. (*FUM*)

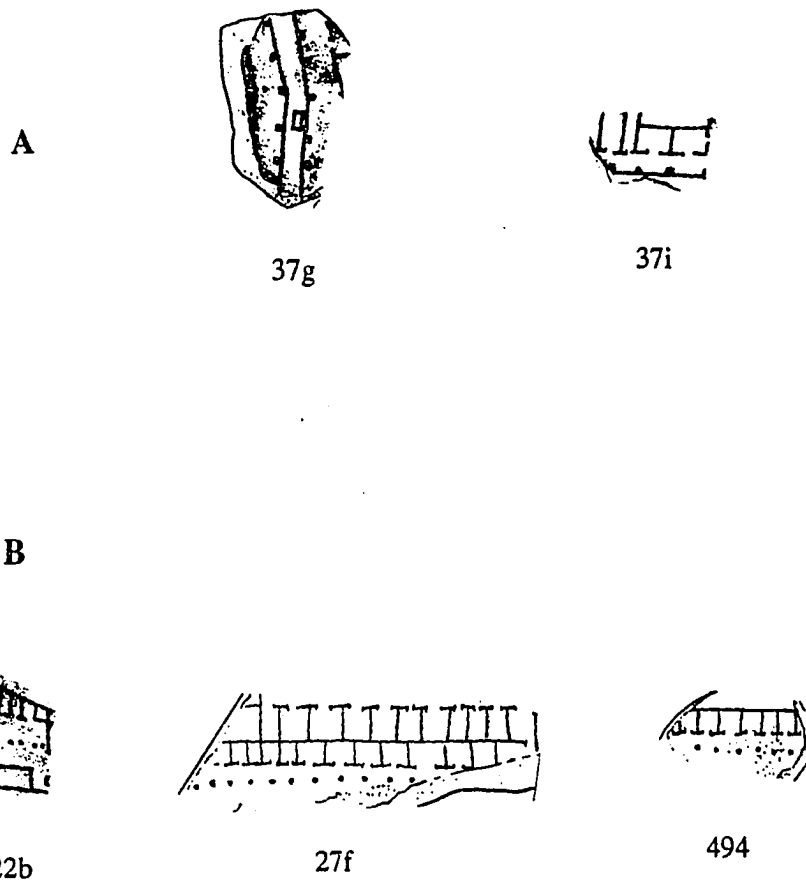


Figure 3.33. Tabernae fronted by colonnades from the Marble Plan. The Plan may illustrate both the roofline and the columns supporting the roof (A) or only the columns (B) of a colonnade. (*FUM*)

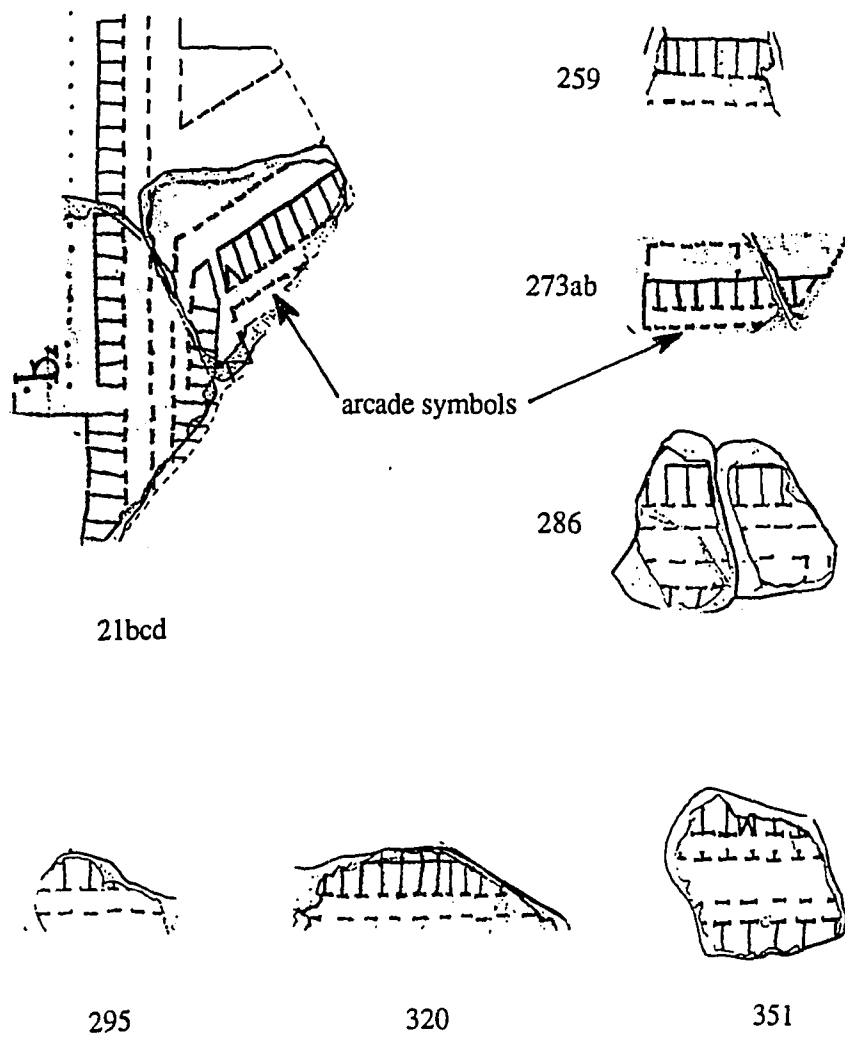
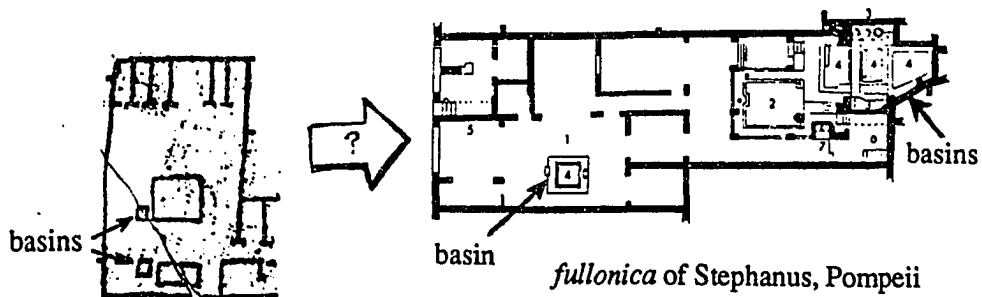
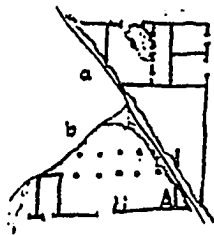


Figure 3.34. Tabernae fronted by arcades, as seen on the Marble Plan. The dashes are a standard symbol for an arcade on the Plan. (*FUM*)



11ef

fullonica of Stephanus, Pompeii

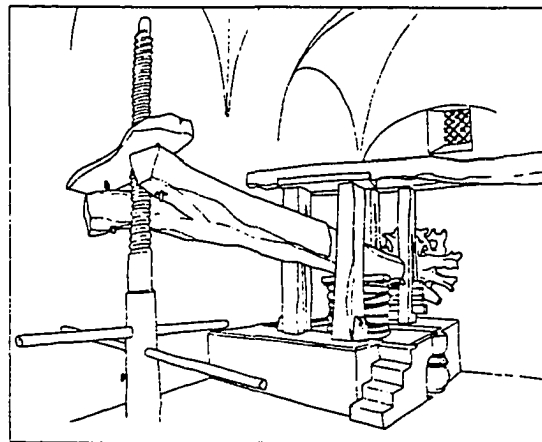
138



184



190



olive press, Pompeii

Figure 3.35. *Tabernae* with workshops on the Marble Plan. The presence of what appear to be basins in fr. 11ef has suggested the identification of the shop as a fullery. The features illustrated in fr. 190 could be presses such as would be used for olives or grapes. (fragments from FUM; Pompeiiian plan and illustration from Adam 1993)

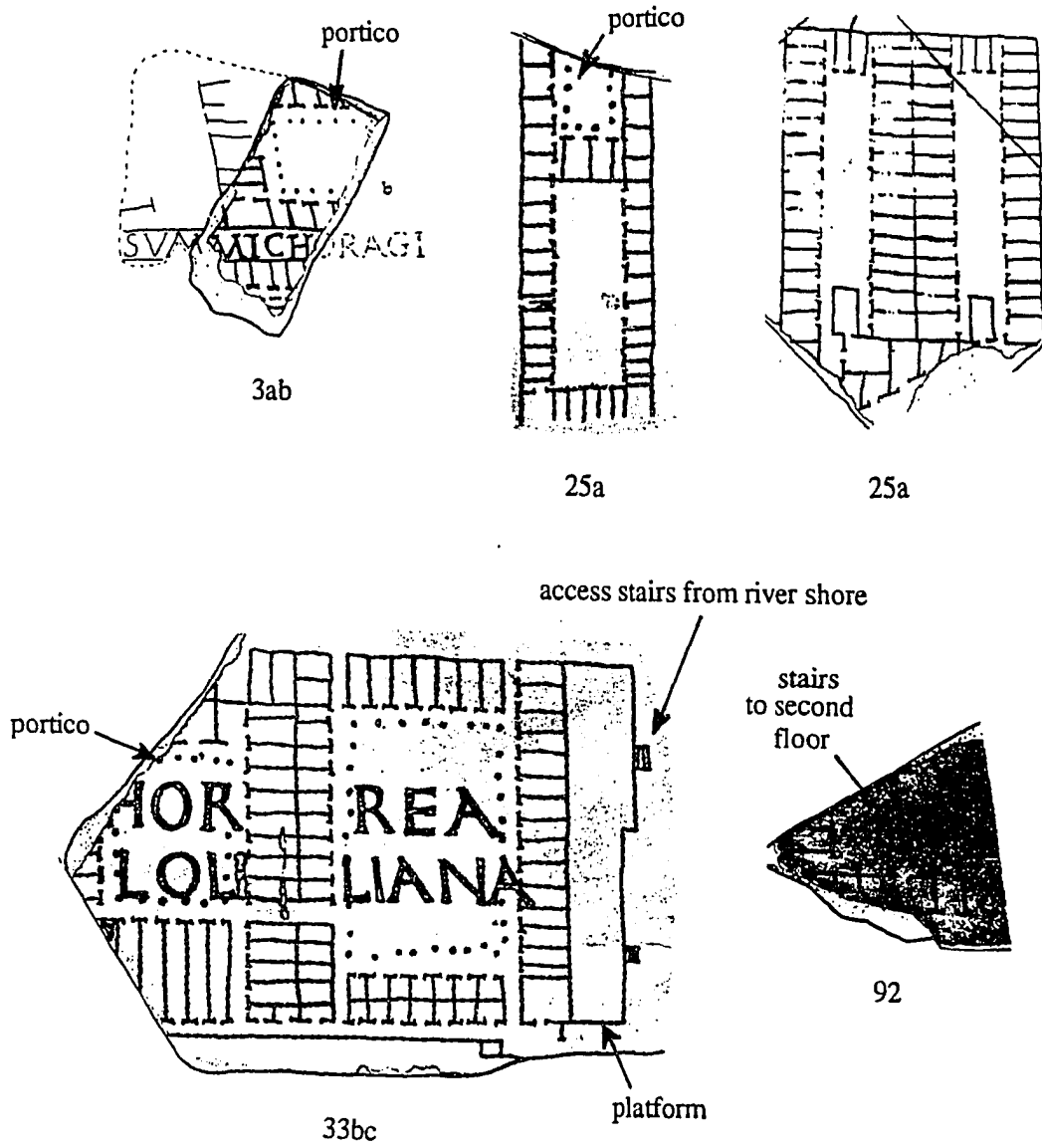


Figure 3.36. Courtyard warehouses on the Marble Plan. (FUM)

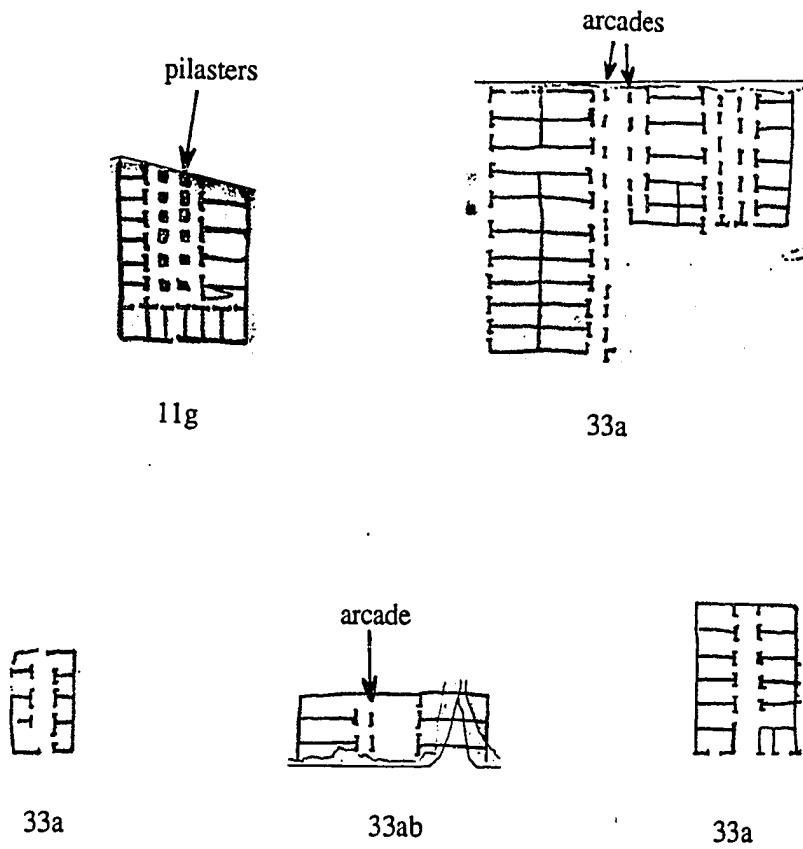


Figure 3.37. Corridor warehouses on the Marble Plan. (FUM)

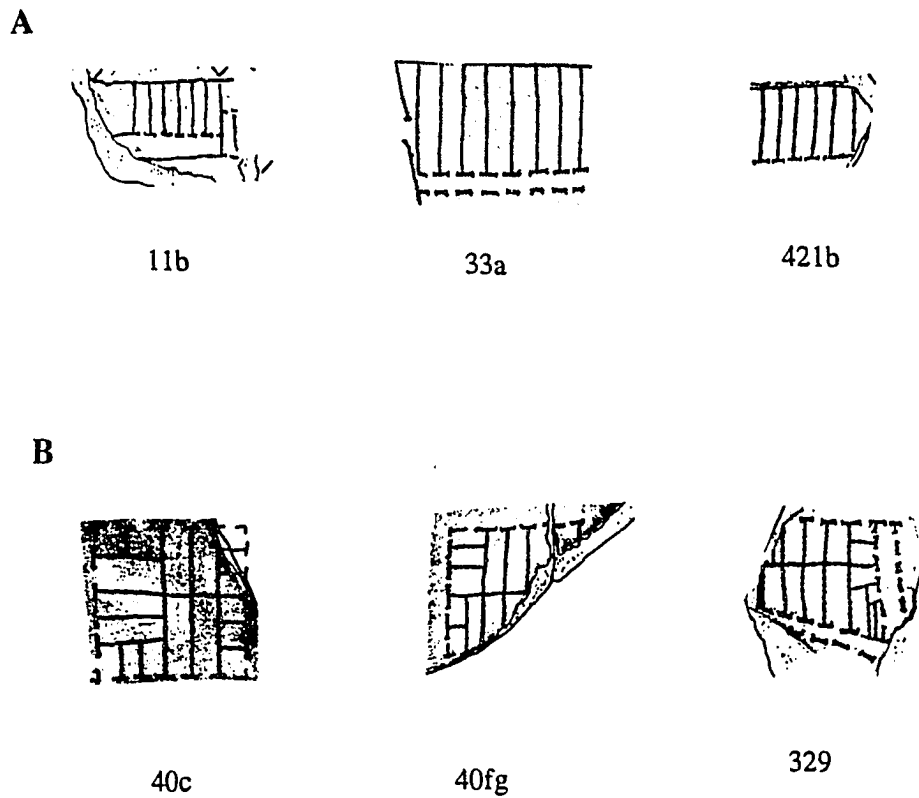


Figure 3.38. 'Magazine-type' warehouses on the Marble Plan. A--in uniform rows; B--with other storerooms of gradated sizes. (*FUM*)

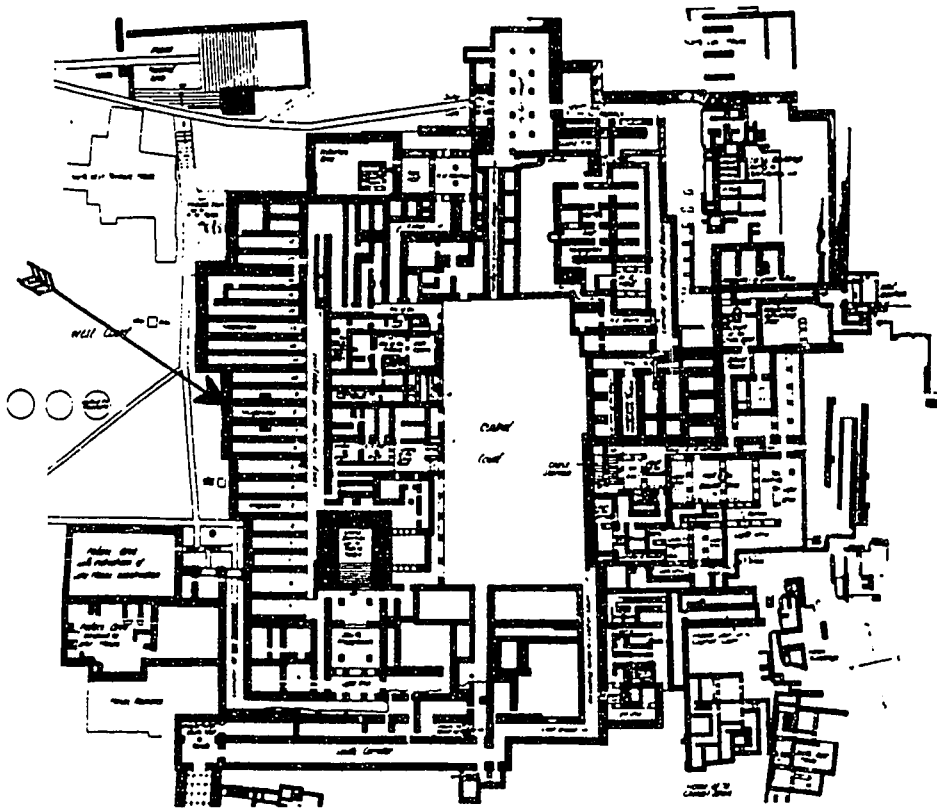


Figure 3.39. 'Magazine' storage rooms in the Minoan Palace at Knossos, Crete, dating to the Bronze Age. (Biers 1980, Fig. 2.1)

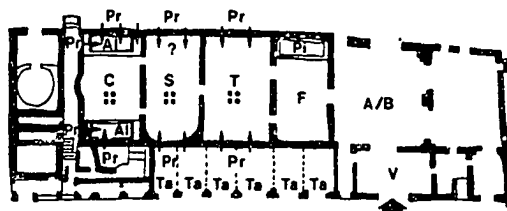
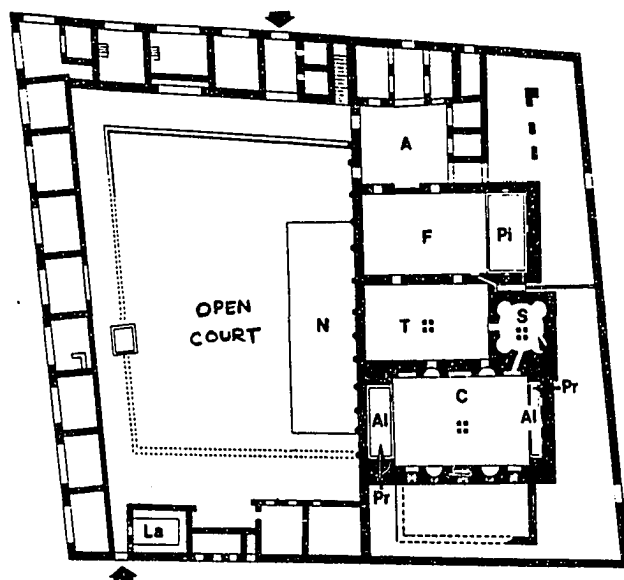


Figure 3.40. Small bath complexes similar to those appearing on the Marble Plan. At top, the Central Baths at Pompeii--note the sequence of bath rooms on the right side of the open court. At bottom, the Terme di Mitra at Ostia. This is a "minimum" bath complex, with no exercise court. It still provided the bath rooms with different water temperatures, and is still identifiable by the row of linked rooms. (Nielsen 1990)

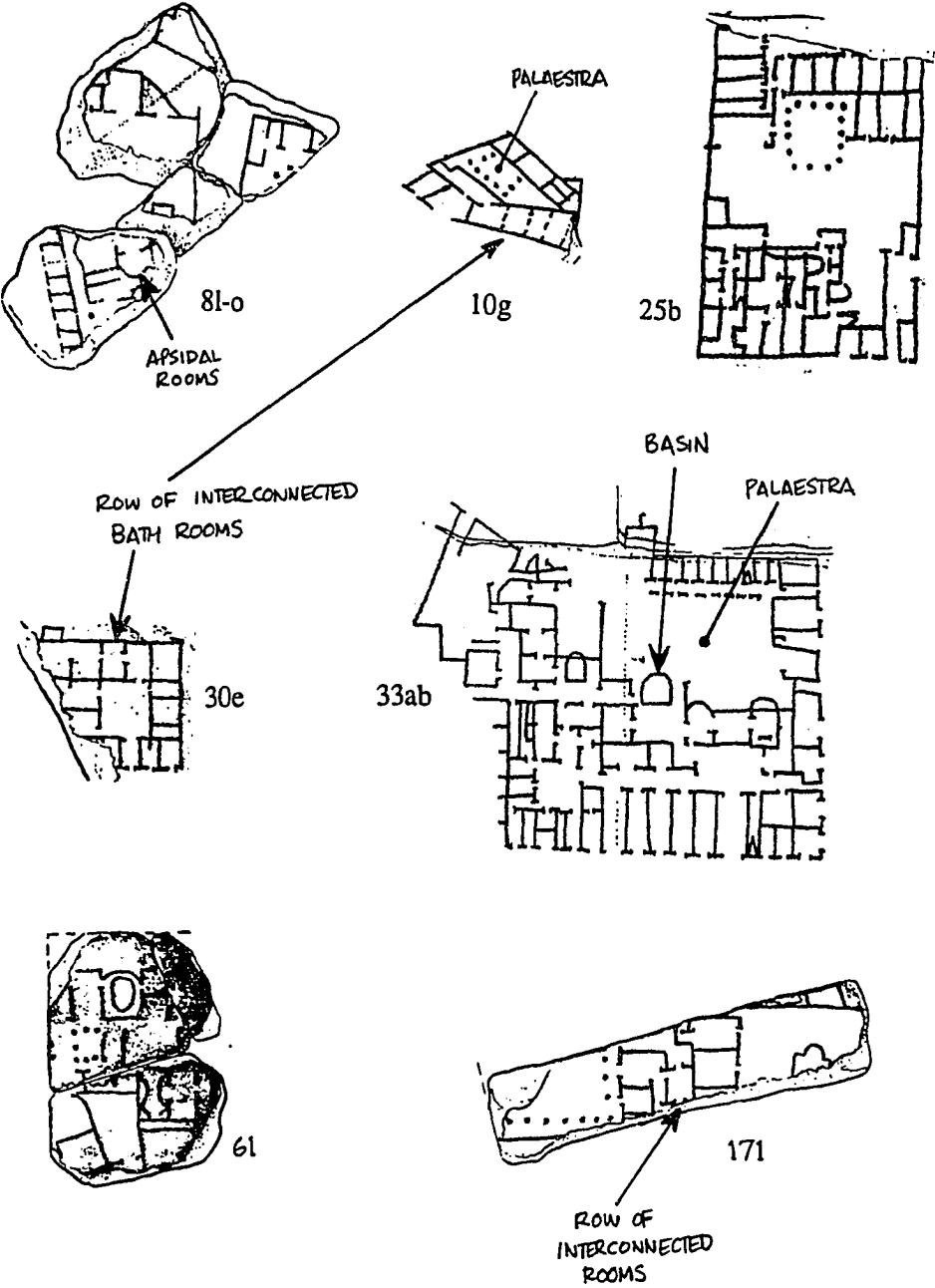


Figure 3.41. Small Baths on the Marble Plan. (FUM)

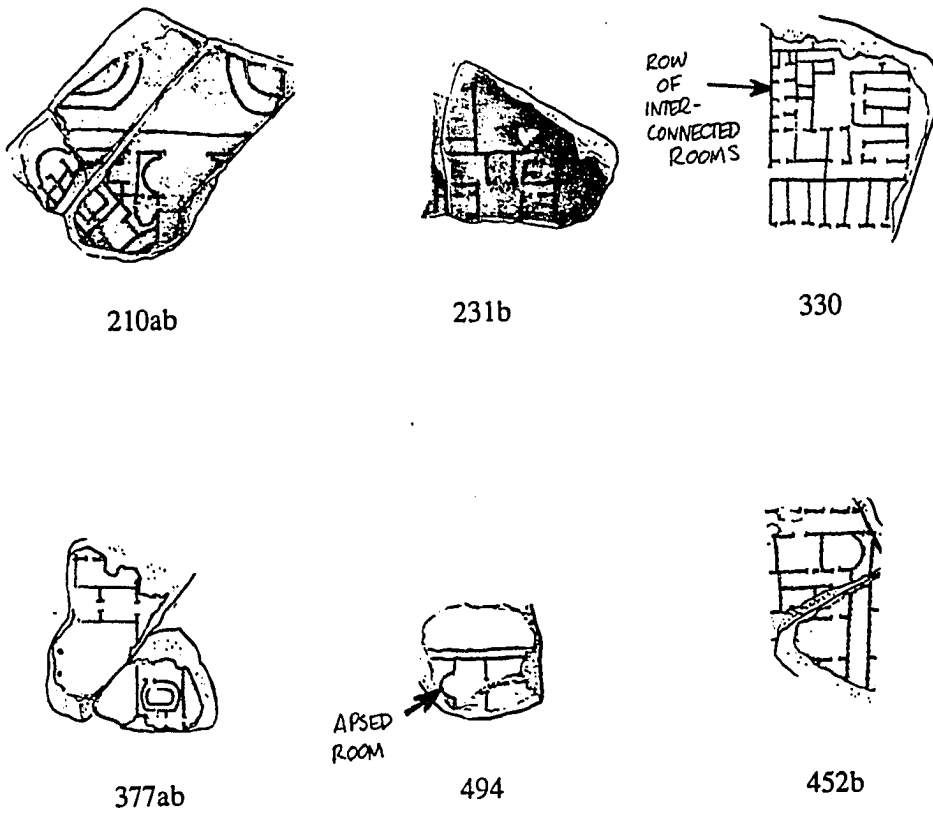


Figure 3.42. Further examples of Small Baths on the Marble Plan. (FUM)

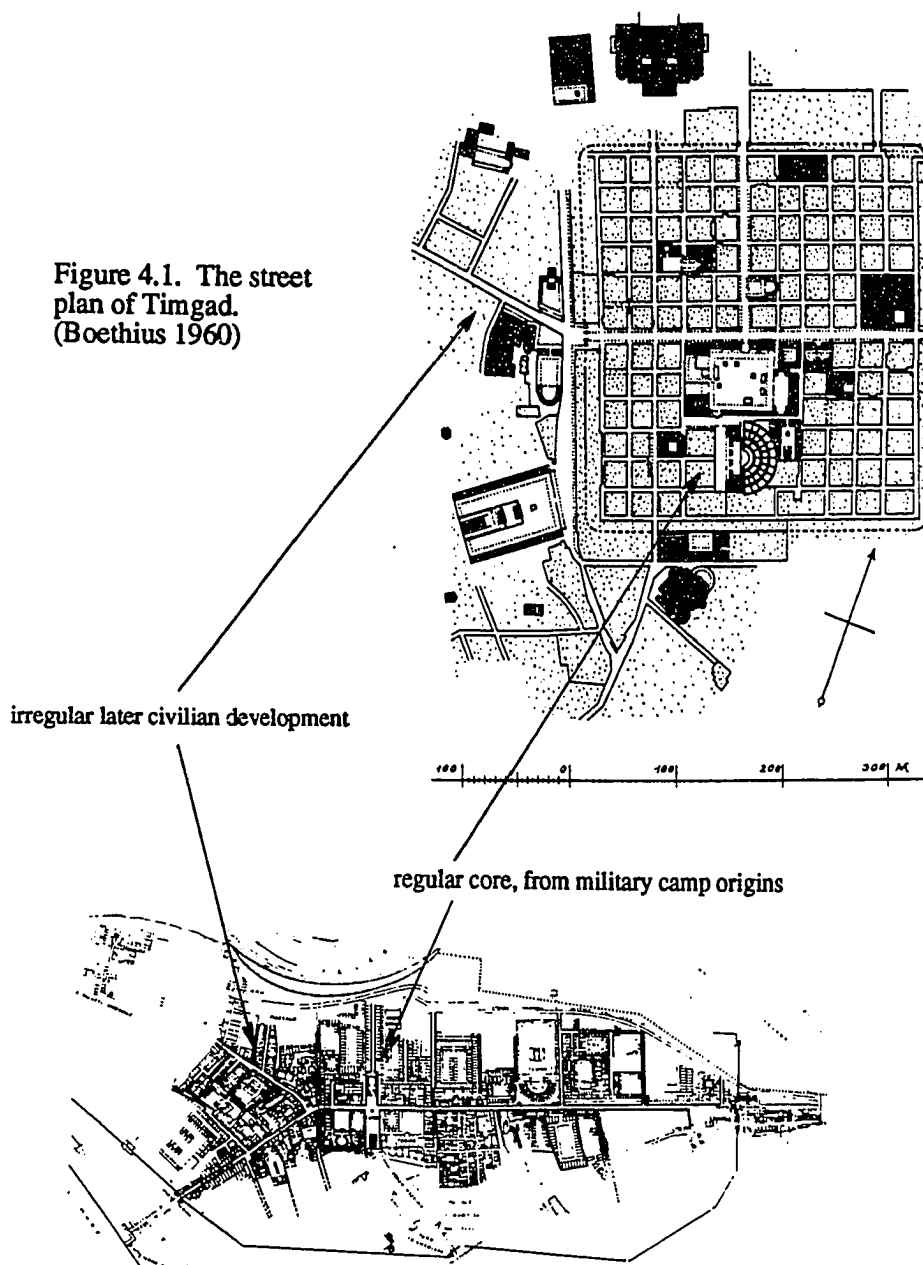


Figure 4.2. The street plan of Ostia. (Boethius 1960)

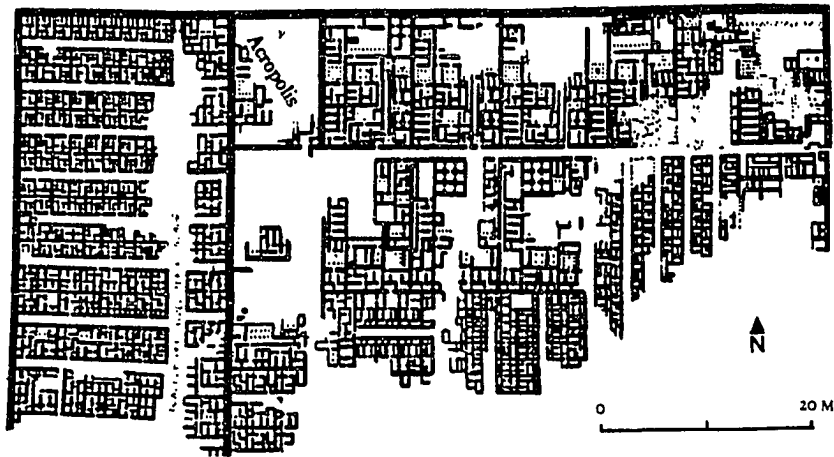
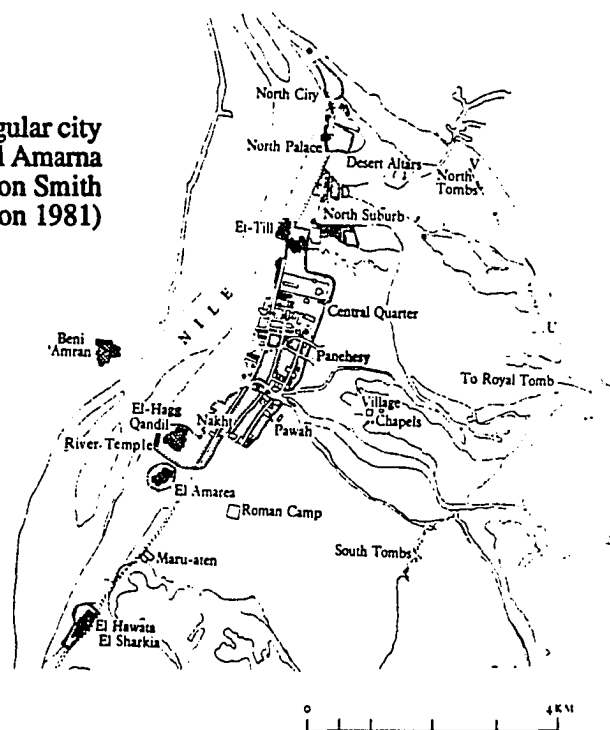


Figure 4.3. The regular city plan of Kahun, Egypt, built for the constructors of Sesostris II's pyramid. (Stevenson Smith and Simpson 1981)

Figure 4.4. The irregular city plan of Tell el Amarna (Akhetaten). (Stevenson Smith and Simpson 1981)



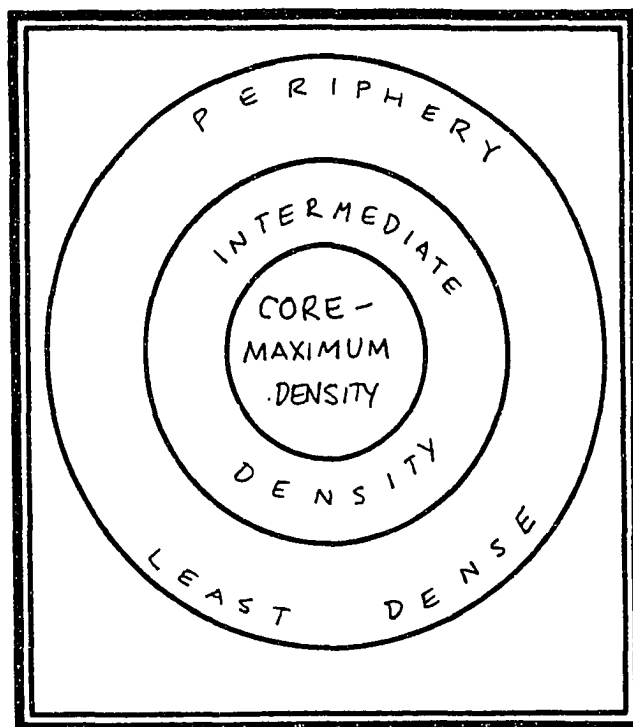


Figure 4.5. Basic concentric growth and density model.

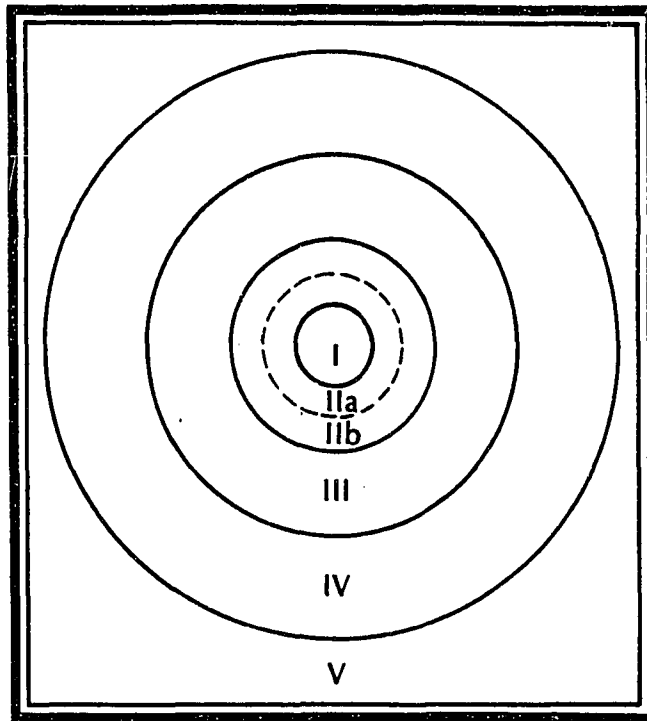


Figure 4.6. The modified concentric zone model. I. city center or central business district; II. zone in transition: a inner belt: factory district, b. outer belt: retrogressing neighborhoods; III. zone of workers' residences; IV. zone of middle-class residences; and V. commuters' zone. (Marcus 1983, Fig. 10.1)

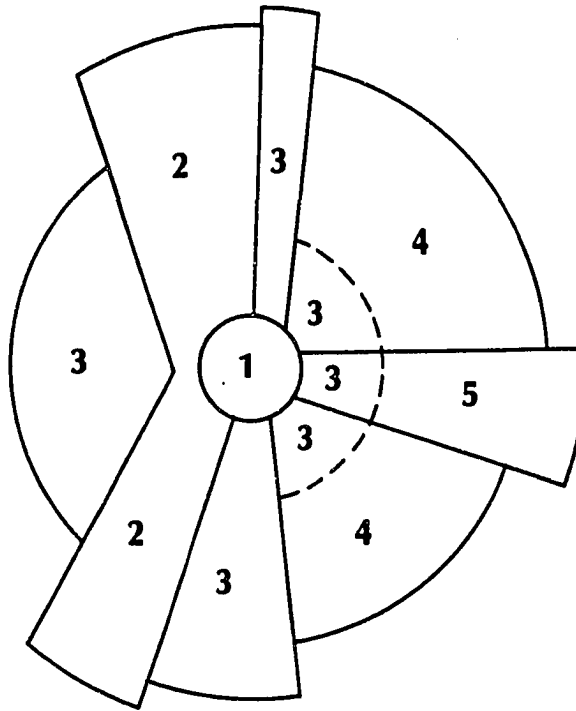


Figure 4.7. The sector model. 1. city center: central business district, 2. manufacturing district, 3. low-status residences, 4. medium-status residences, and 5. high-status residences. (Marcus 1983, Fig. 10.2)

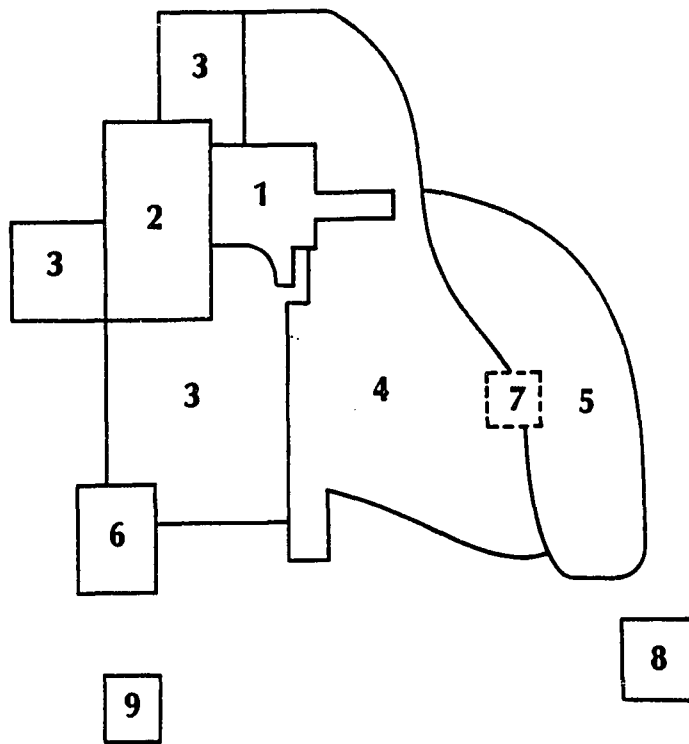


Figure 4.8. The multiple nuclei model. 1. central business district, 2. wholesale light manufacturing, 3. lower-status residential, 4. medium-status residential, 5. higher-status residential, 6. heavy manufacturing, 7. outlying business district, 8. residential suburb, and 9. industrial suburb. (Marcus 1983, Fig. 10.4)

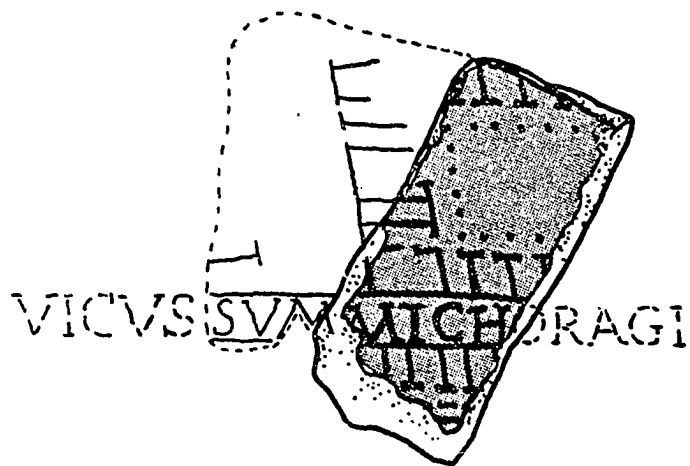


Figure 4.10. *Vicus Summi Choragi*, named in an inscription on the Marble Plan (fr. 3). *Vici* (neighborhoods) are emphasized in the Regionary Catalogue statistics lists, and are also given special recognition by inscriptions on the Plan. (FUM)

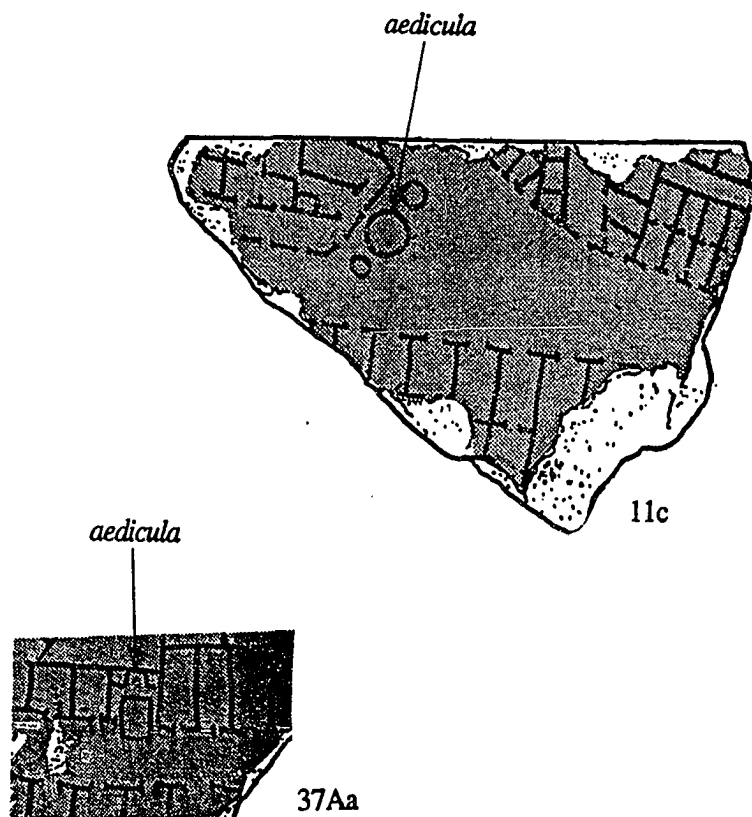


Figure 4.11. *Aediculae* on the Marble Plan. *Aediculae*, neighborhood street shrines, were located at intersections or at the sides of streets. *Aediculae* were foci of neighborhood identity, as emphasized by their prominent place in the Regionary statistical lists, and it is not surprising that they are included on the Plan. (FUM)

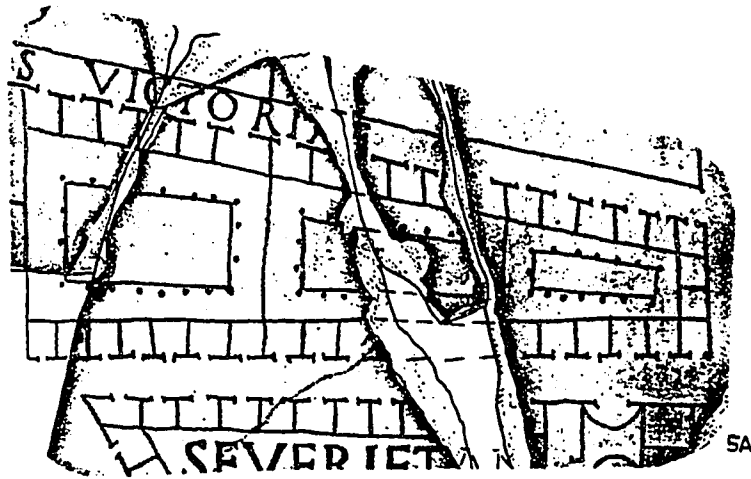


Figure 4.12. *Insulae* on the Marble Plan. (FUM)

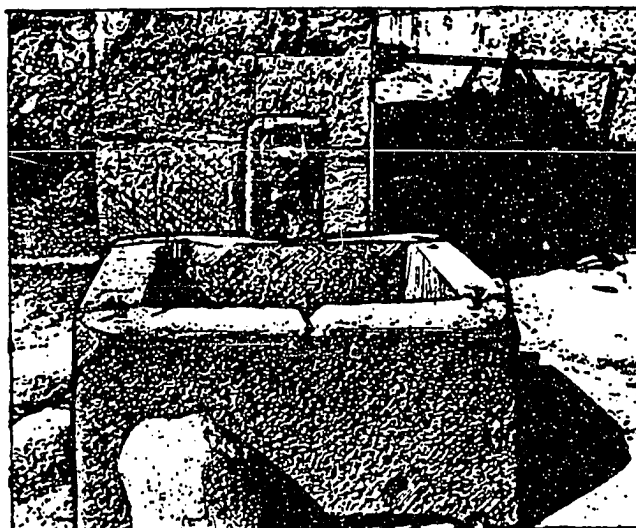


Figure 4.13. A lacus, or street fountain, at Pompeii. (modified from Laurence 1994).

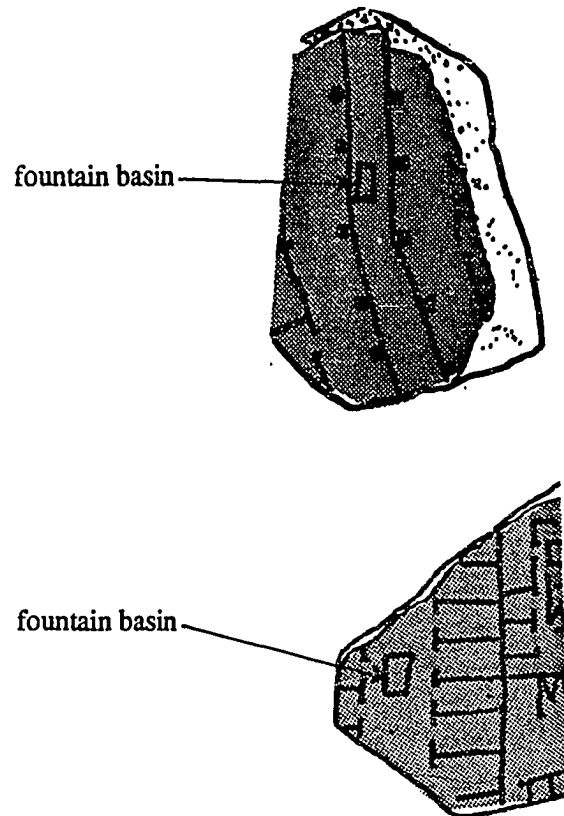


Figure 4.14. *Lacus*, street fountains, on the Marble Plan. The placement of these basins in the middle of streets is similar to cases seen at Pompeii, and stems from the requirement that the *lacus* be on public property. (*FUM*)

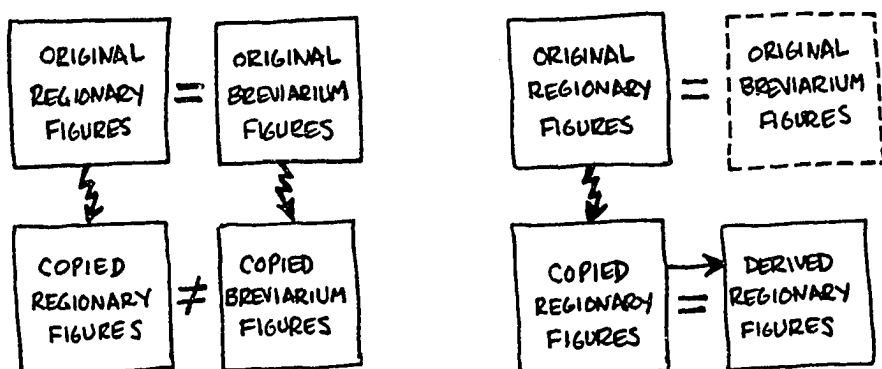


Figure 4.15. Two possible scenarios for the lineage of the different sets of statistical figures in the Regionary Catalogues. The original *Breviarium* figures are merely totals of the regionary figures, so in the original document the two were equal. Manuscript copying introduces errors (jagged arrow). If the two sets of figures are transmitted separately, unique manuscript error histories will make the two totals unequal. Alternatively, if the later *Breviarium* figures are derived from miscopied regionary figures, they will be equal to those miscopied figures. The situation obtaining in the real manuscripts of the Regionaries shows unequal totals for the regionary and *Breviarium* figures, and so the first scenario is indicated. This is encouraging, since it means that there are two independent links to the original figures, and hence more chance of identifying them.

	Breviarium totals	Breviarium totals Adjusted	Regionary list totals	Adjusted Regionary totals	degree of discrepancy	Adjusted degree of discrepancy
Vici	423/424	323/324	307/304		27%/28%	5%/6%
Aediculae	423/424	323/324	307/304		27%/28%	5%/6%
Vicomagistri	672		672		0%	
Curatores	28		28		0%	
Insulae	46,602		43,580		6%	
Domus	1,790		1,681/1,782		6%/0%	
Horrea	290		335/334	305/304	13%/13%	5%/5%
Balnea	856		892/917		4%/7%	
Lacus	1,352		1,209,1,221		11%/10%	
Pistrina	254		258/256		2%/1%	

Figure 4.16. Degrees of discrepancy between the figures given in the *Breviarium* summary and the figures in the Regionary lists.

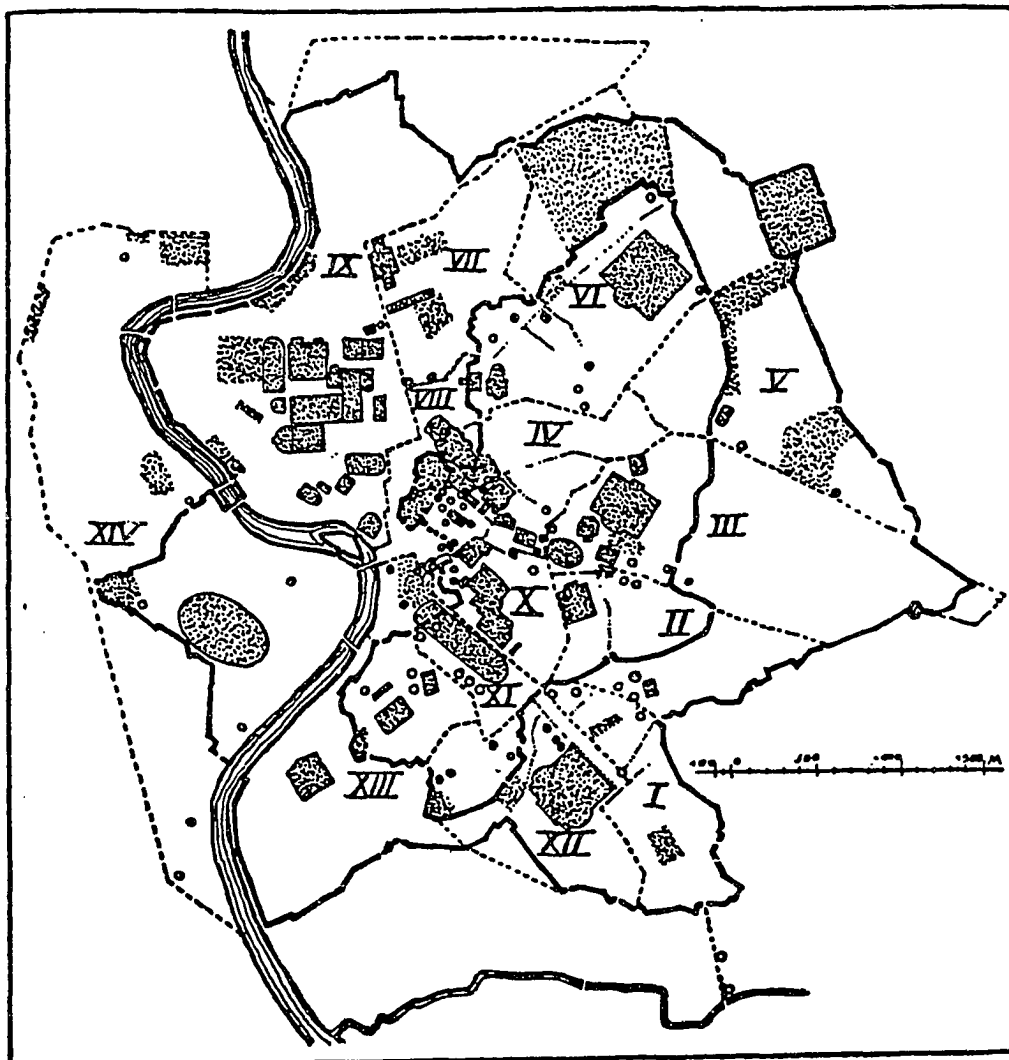


Figure 4.17. Known monuments in relation to regional boundaries. One of the traditional uses of the Regionary catalogues has been to determine the boundaries of Rome's fourteen regions by plotting the monuments listed for each region, and then drawing lines between them. The dotted lines at the perimeter of the map indicate portions of regions lying outside the Aurelian Walls (heavy lines). (Von Gerkan, 1949)

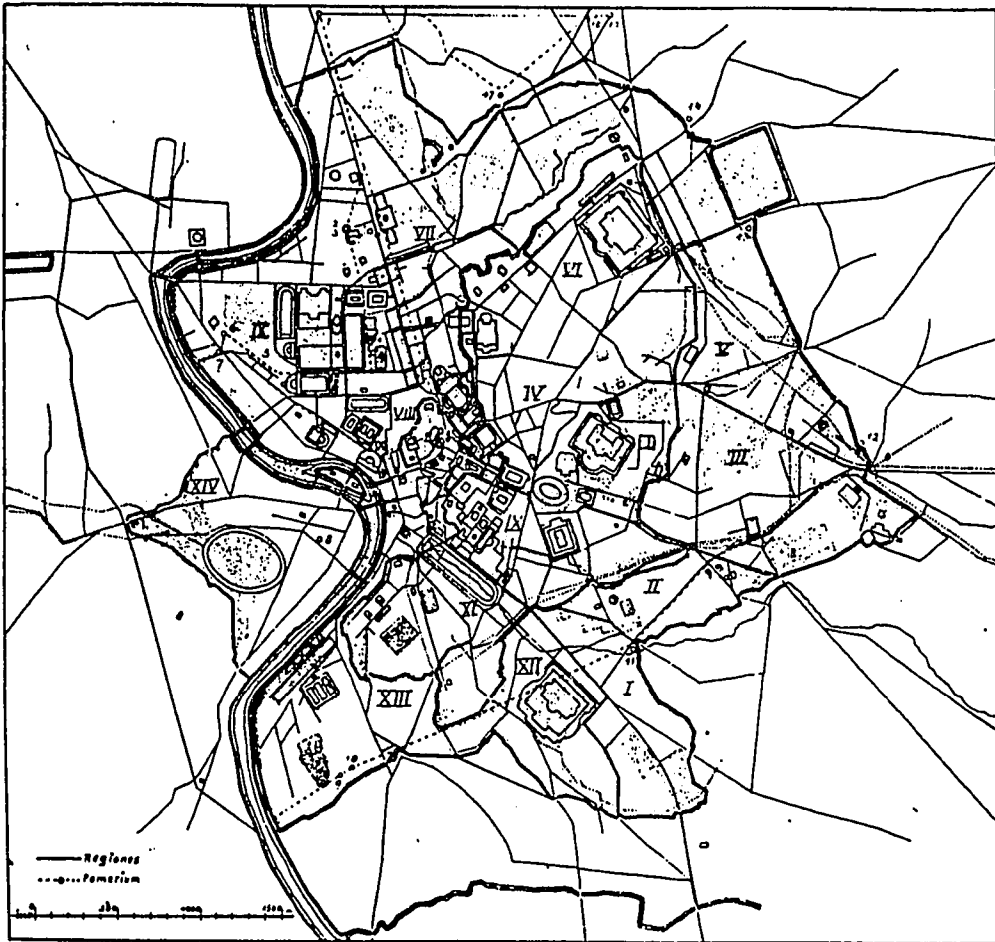


Figure 4.18. Map of Rome by Von Gerkan, on which the regionary maps used in this study are based. (Von Gerkan 1949)

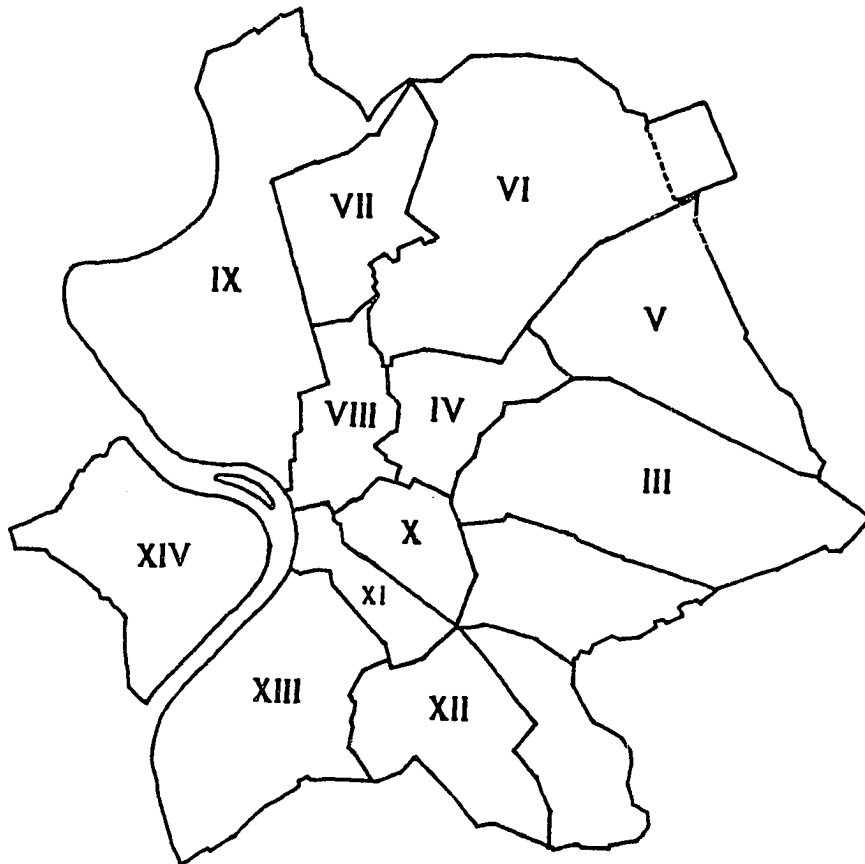
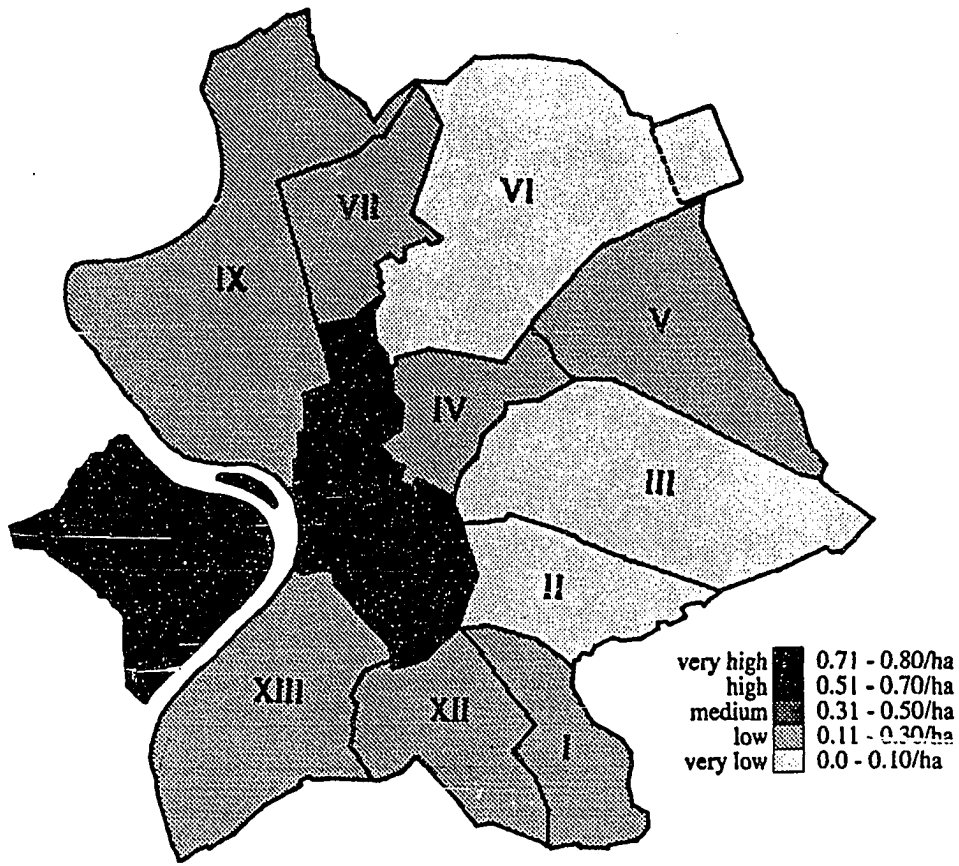


Figure 4.19. Regionary map template used for density plots in this study, derived from Von Gerkan's map of Rome and the regionary boundaries (Fig. 4.18).



DENSITY OF AEDICULAE

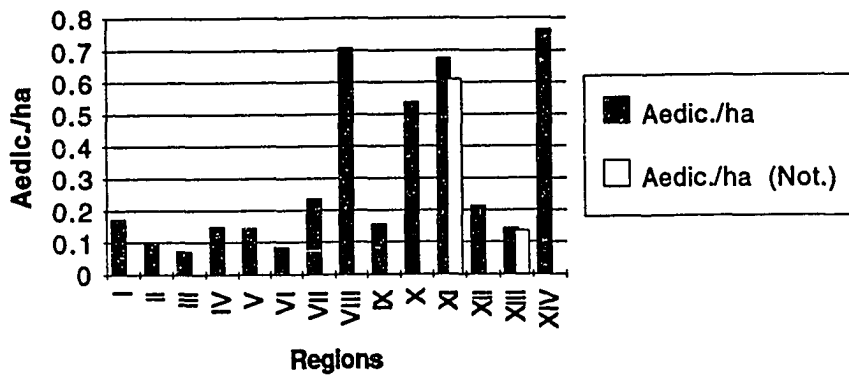


Figure 4.20. Density of *aediculae*, neighborhood shrines.

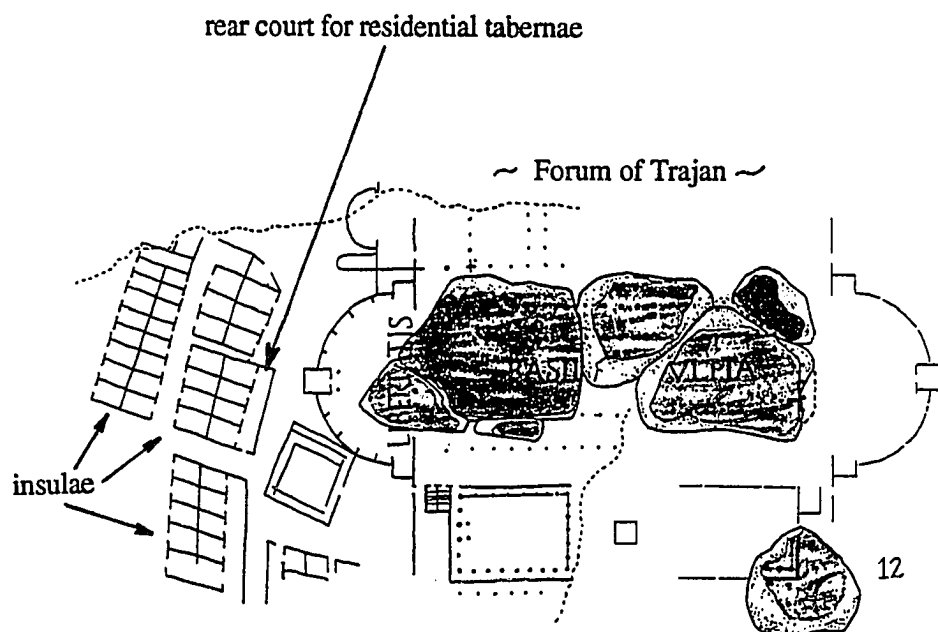


Figure 4.21. Insulae closely bordering the Forum of Trajan, as shown on the Marble Plan. (*FUM*)

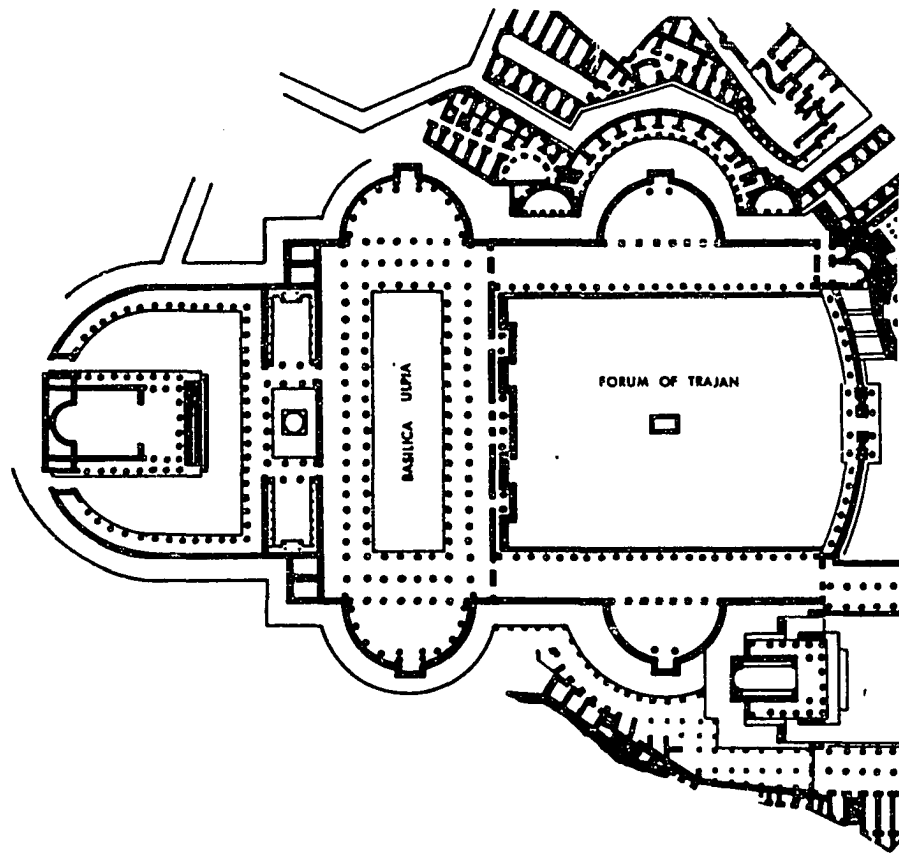
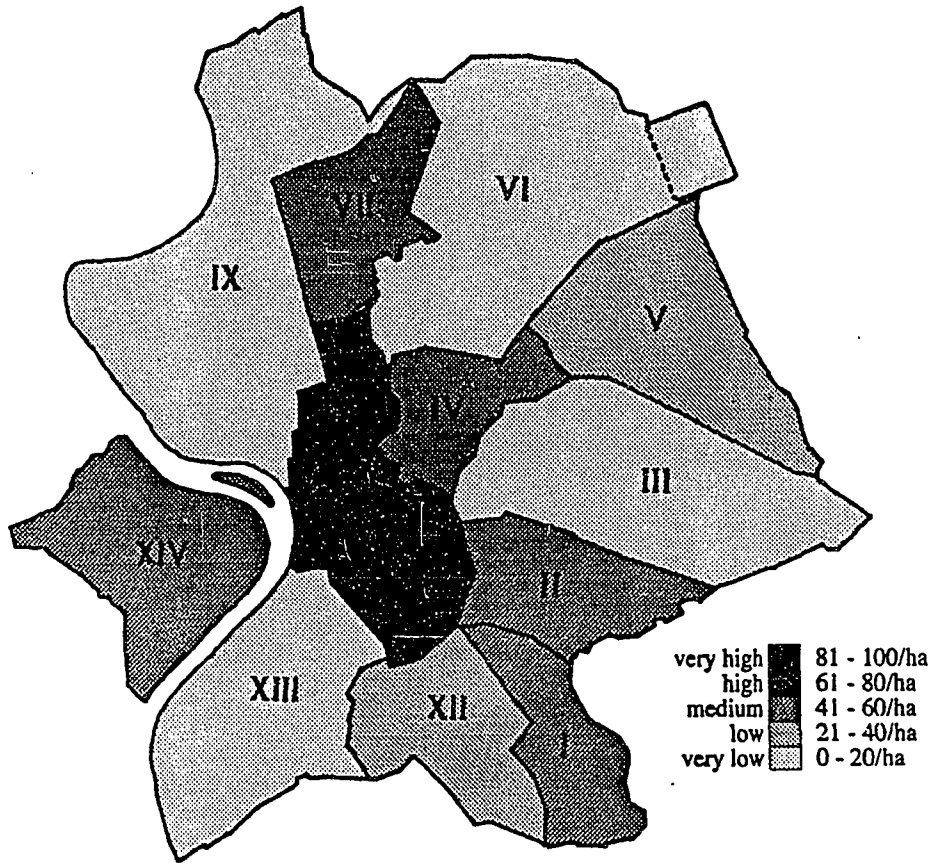


Figure 4.22. Plan of the Forum of Trajan. The main plaza, much lauded in antiquity, is a large rectangular open space of simple design. (Sear, 1982)



DENSITY OF INSULAE

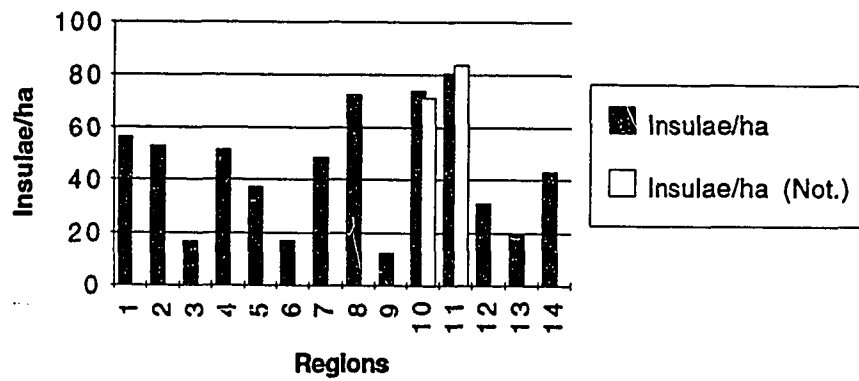
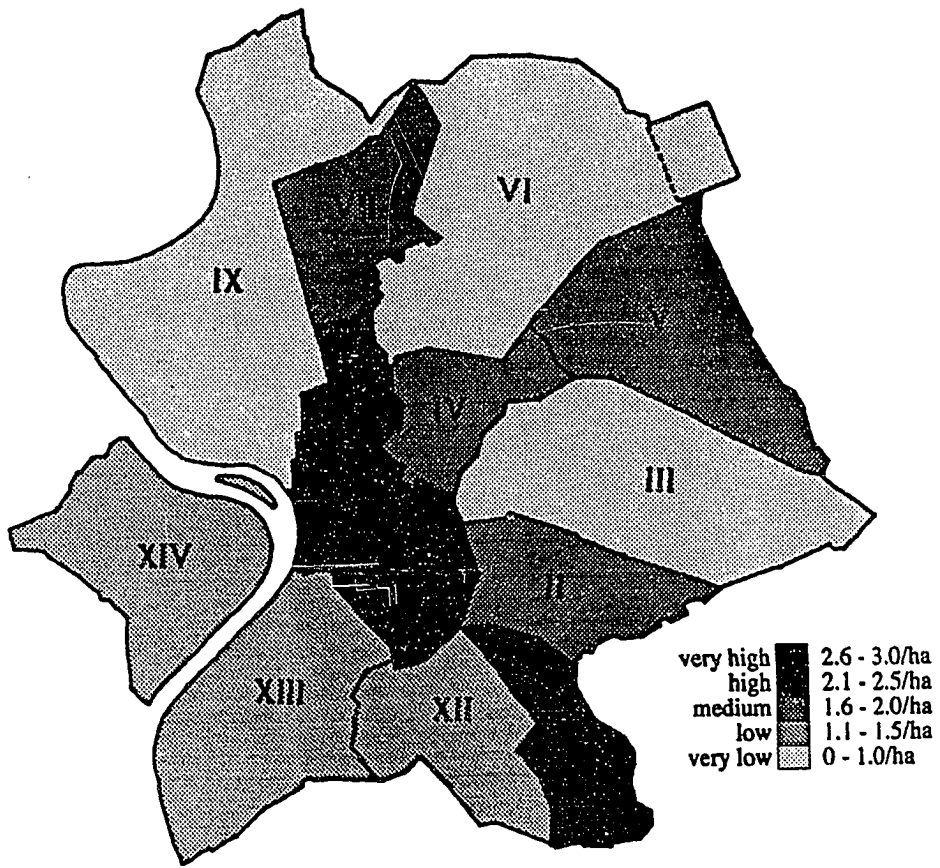


Figure 4.23. Density of *insulae*, apartment buildings.



DENSITY OF DOMUS

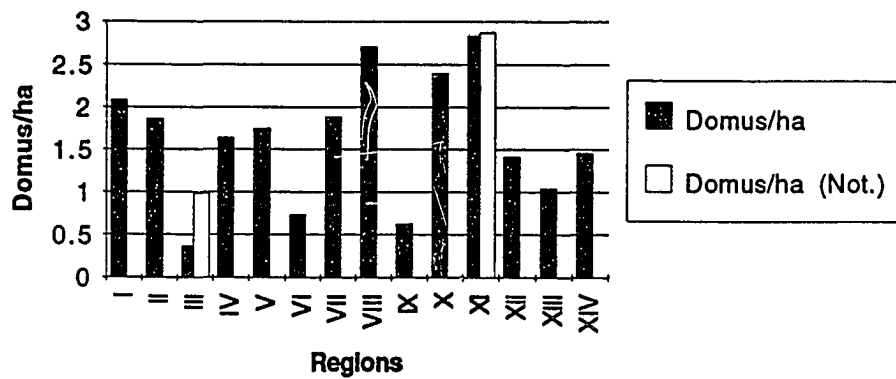


Figure 4.24. Density of domus, private houses.

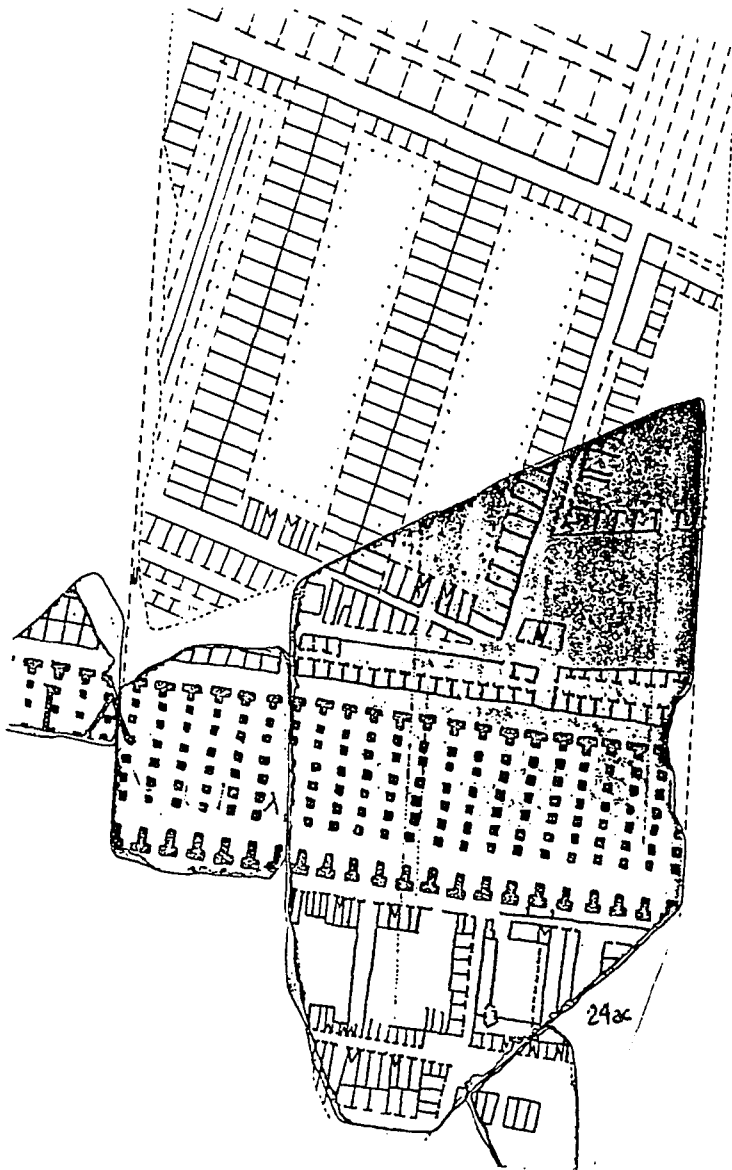
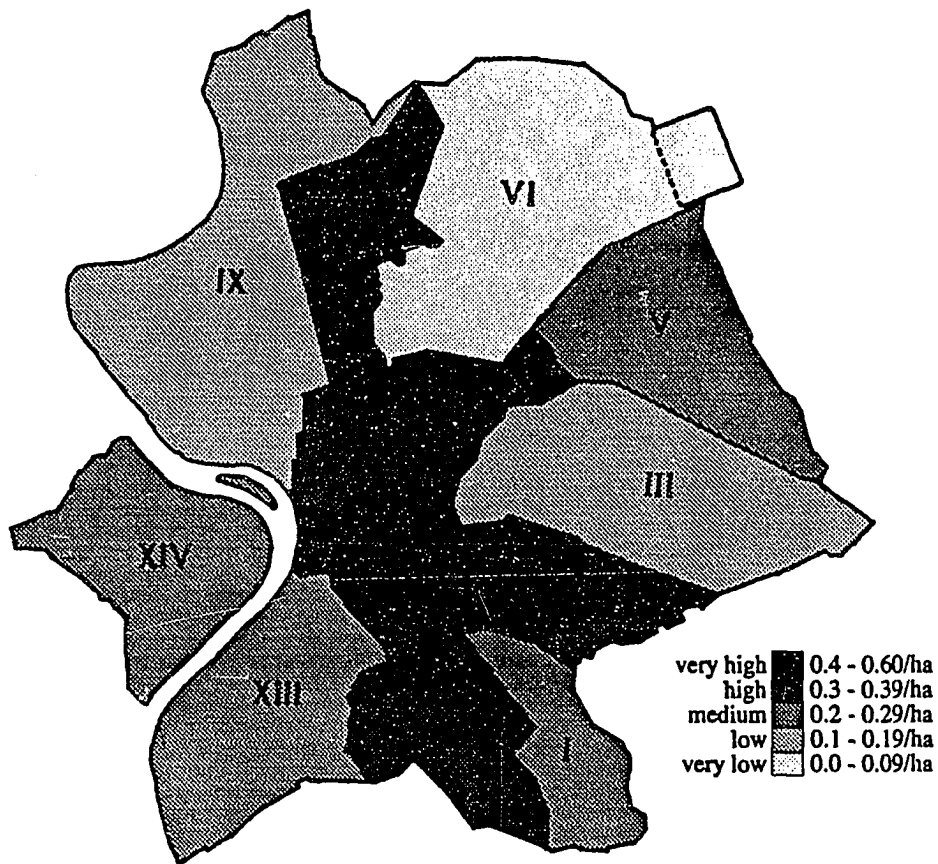


Figure 4.25. The Marble Plan reveals a concentration of very large warehouses on the lower shores of the Trans-Tiber region (XIV) and (here) the shores of the Aventine region (XIII). The Regionary Catalogue tallies for warehouses in these regions do not reflect the fact that these are the largest and most extensive warehouses in the city. The Plan and the Regionaries are best used together. (FUM)



DENSITY OF HORREA

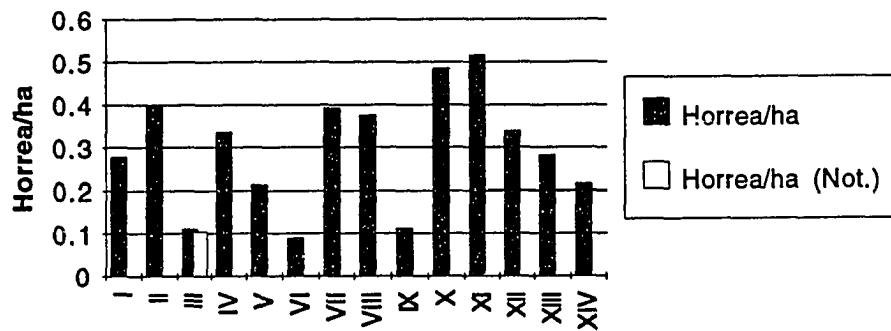
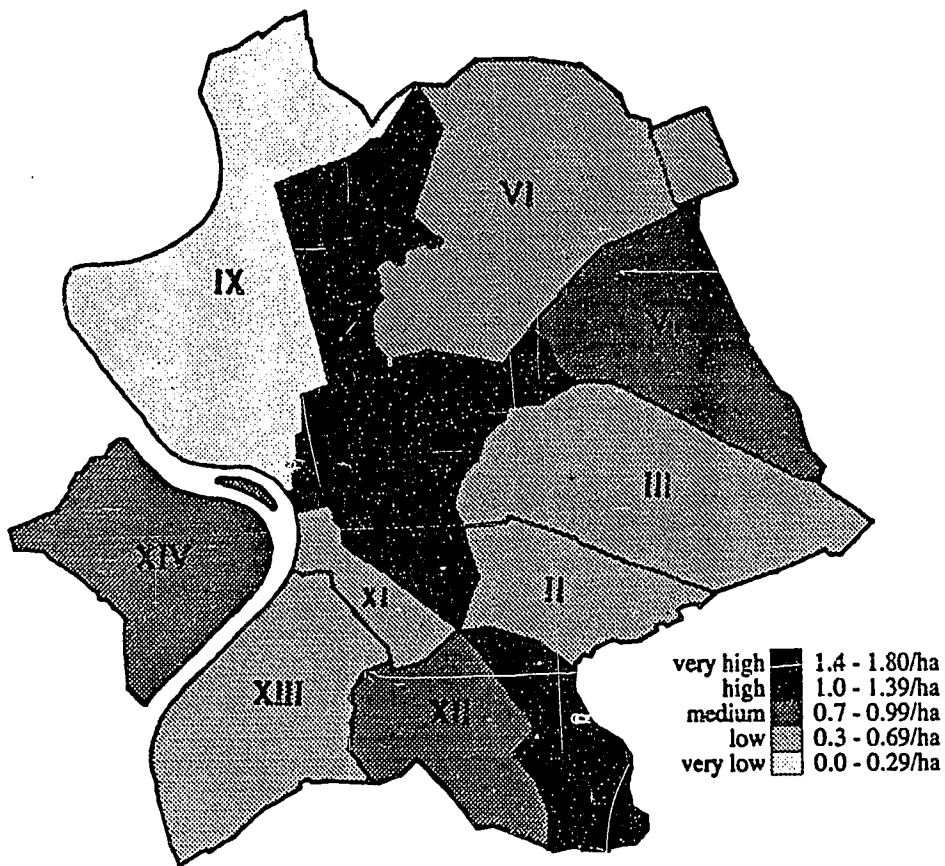


Figure 4.26. Density of horrea, warehouses and storehouses.



DENSITY OF BALNEA

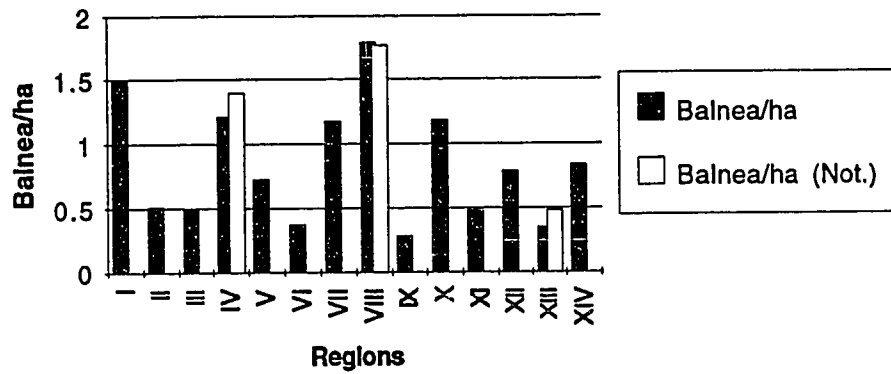
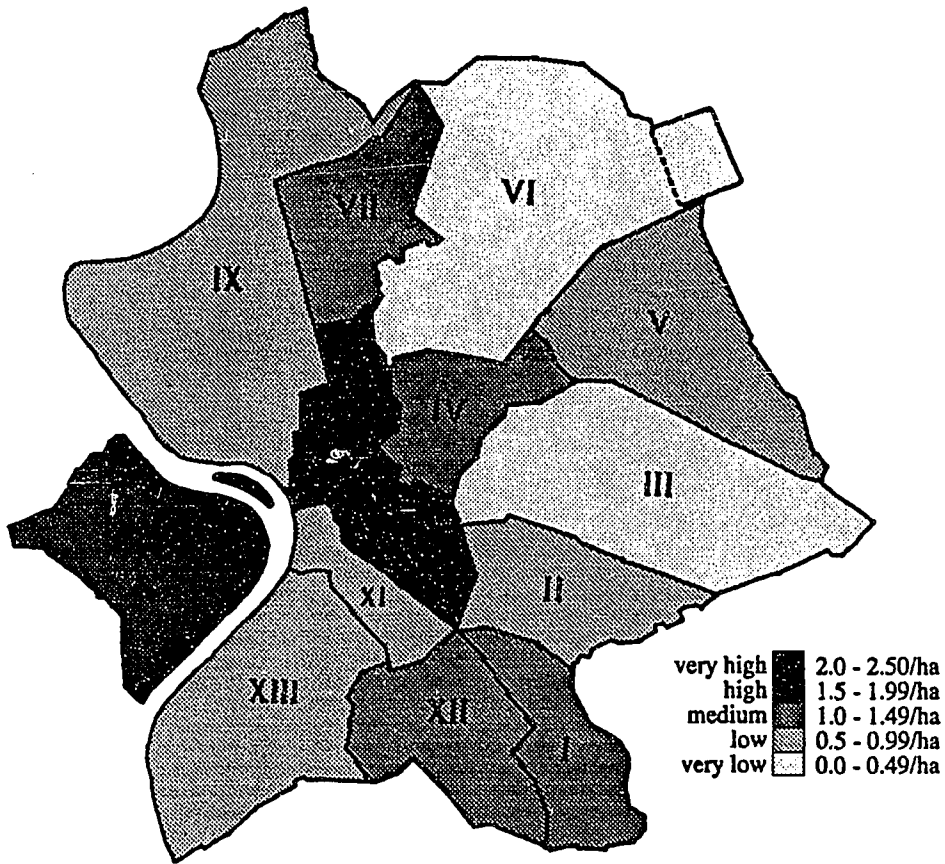


Figure 4.27. Density of *balnea*, small baths.



DENSITY OF LACUS

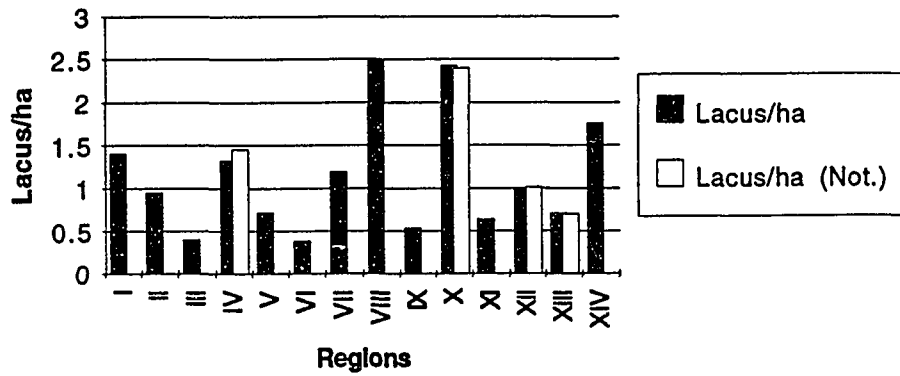
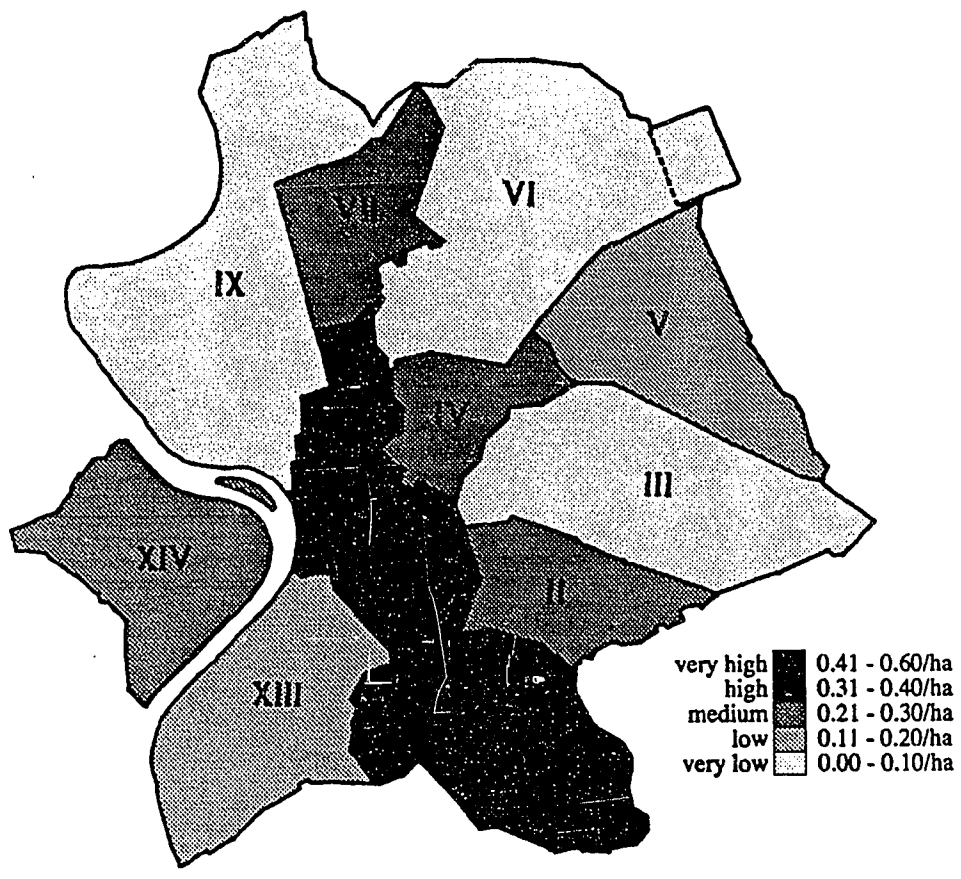


Figure 4.28. Density of *lacus*, street fountains



DENSITY OF PISTRINA

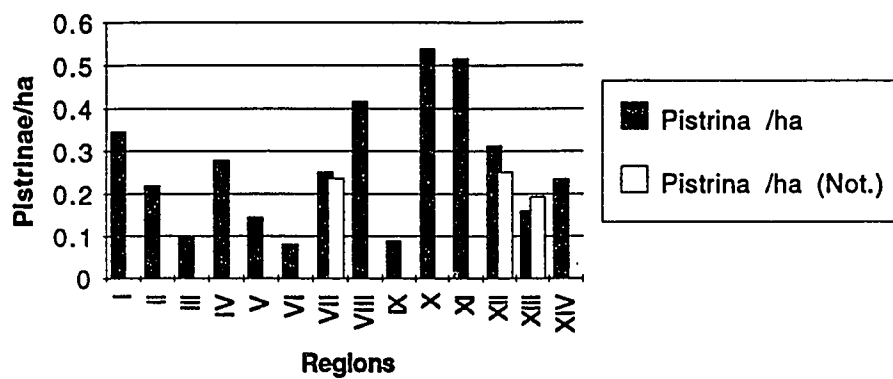


Figure 4.29. Density of *pistrina*, retail bakeries.

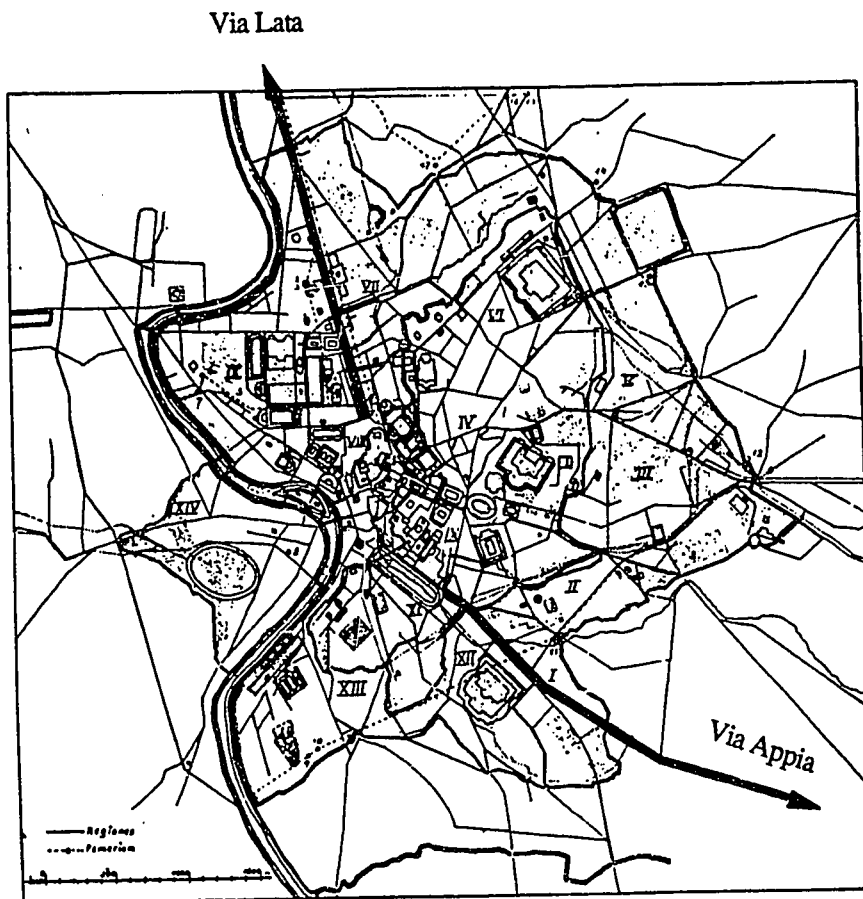


Figure 4.30. Major transport corridors of Rome: the Via Lata and the Via Appia. These corridors are associated with higher densities of the non-monumental matrix.

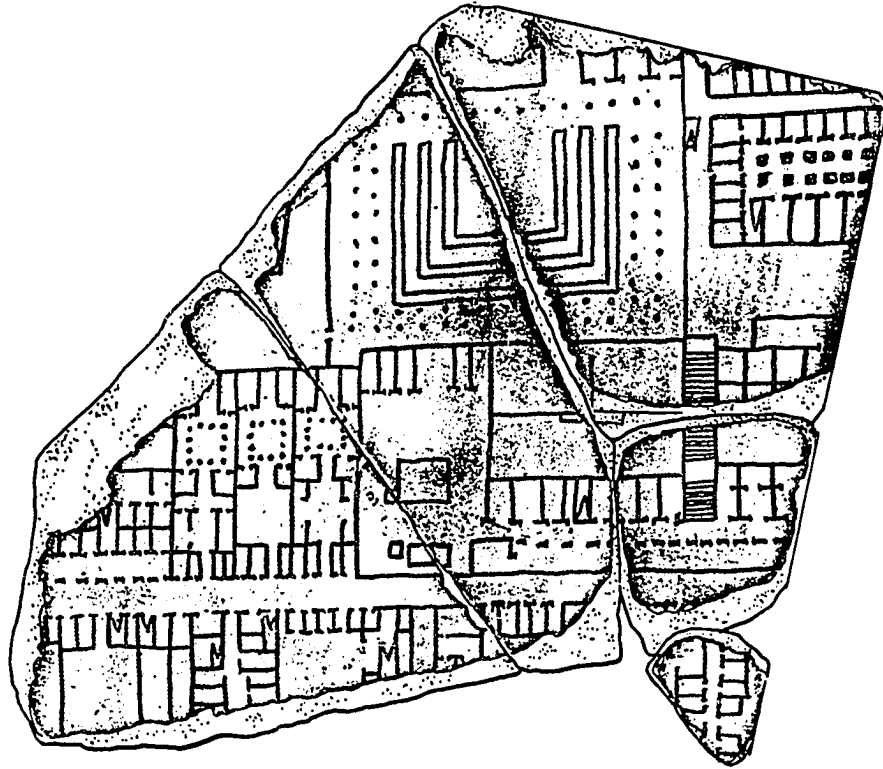


Figure 4.31. Fragment 11 of the Marble Plan illustrates a variety of building types in Rome, all in close proximity. (*FUM*)

REGION	VICI	INSULAE	DOMUS	HORREA	BALNEA	LACUS	PISTRINA			
PORTA CAPENA I	■	■	■	■	■	■	■			
CAELIAN HILL II	■	■	■	■	■	■	■			
ISIS AND SERAPIS III	■	■	■	■	■	■	■	■	■	very high
TEMPLE OF PEACE IV	■	■	■	■	■	■	■	■	■	
ESQUILINE HILL V	■	■	■	■	■	■	■	■	■	high
ALTA SEMITA VI	■	■	■	■	■	■	■	■	■	
VIA LATA VII	■	■	■	■	■	■	■	■	■	medium
ROMAN FORUM VIII	■	■	■	■	■	■	■	■	■	
CAMPUS MARTIUS IX	■	■	■	■	■	■	■	■	■	low
PALATINE HILL X	■	■	■	■	■	■	■	■	■	
CIRCLUS MAXIMUS XI	■	■	■	■	■	■	■	■	■	very low
PUBLIC POOL XII	■	■	■	■	■	■	■	■	■	
AVENTINE HILL XIII	■	■	■	■	■	■	■	■	■	
TRANS TIBER XIV	■	■	■	■	■	■	■	■	■	

Figure 4.32. This chart compiles the relative density plots from earlier figures. By isolating the row for a particular region (with the edge of a sheet of paper), it is possible to see a density profile of that region, and distinguishing characteristics tend to stand out.

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